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# European Chemistry Congress

June 16-18, 2016 Rome, Italy

## Keynote Forum (Day 1)



# European Chemistry Congress

June 16-18, 2016 Rome, Italy



## Antonio Culebras

SUNY Upstate Medical University, USA

### Sleep apnea is a risk factor for cognitive decline of vascular origin

Clinical evidence suggests that moderate to severe obstructive sleep apnea (OSA) is a risk factor for development of vascular cognitive impairment as a result of cerebral subcortical small vessel disease expressed as leukoaraiosis and silent infarctions. A recent study showed that old women with OSA AHI>15 were more likely to develop cognitive impairment (AOR, 1.85; [95% (CI), 1.11-3.08]. Other authors have shown that OSA AHI>15 is a risk factor for cerebral white matter changes in middle-aged and older patients (OR:2.08 [95% (CI):1.05-4.13]) and for silent cerebral infarction in > 65 y/o patients (OR:2.44 [95% (CI):1.03-5.80]). Intermittent nocturnal hypoxia in patients with moderate to severe OSA contributes to ischemic damage in the cerebral periventricular territory of long penetrating terminal arteries. Blood flow may be already precarious as a result of diabetic vascular autonomic dysregulation and poorly controlled hypertension. Ischemic damage to the cerebral periventricular white matter disturbs the connections of the cortex with the thalamus leading to subcortical dementia characterized by apathy, decreased executive functions, poor memory and in later difficulty walking and urinary incontinence. Treatment of OSA with CPAP may lower cerebrovascular risk by decreasing 24-h urinary catecholamine excretion, improving arterial stiffness, improving baroreflex sensitivity and reducing mean 24-h ambulatory blood pressure. CPAP applications may delay onset of dementia. However, CPAP applications will not modify structural lesions of the brain and therefore early diagnosis and treatment of sleep apnea before structural brain damage ensues is strongly recommended, particularly in patients with several risk factors for stroke.

### Biography

Antonio Culebras is a Professor of Neurology, SUNY Upstate Medical University, and consultant in the Sleep Center of Upstate Medical University, Syracuse, New York. He is Certified by the American Board of Psychiatry and Neurology and received his Doctorate of Medicine (PhD equivalent) from the University of Alicante, Spain. He is Certified by the American Board of Psychiatry and Neurology, Sleep Medicine. He has lectured in English and Spanish in over 40 countries. He has published 7 books on sleep disorders, co-edited 2 books on cerebrovascular disease, published over 200 articles in professional journals, and has served or serves in the editorial board of 15 national and international neurological publications.

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**Karan Jutla**

*De Montfort University, UK*

## Working with migrant communities: Achieving culturally competency in dementia care

Vascular dementia has been reported as the most common form of dementia in South Asian communities living in the UK due to higher incidences of hypertension and diabetes. Research on dementia care in these communities has highlighted the need for the need for cultural competency training for those working professionally with people with dementia and their families. It has been evidenced that while many health professionals feel that they need more training to both improve their knowledge about dementia and the cultural norms and religious practices of South Asian people with dementia, access to this sort of training is variable. Because of the acute lack of quantitative and qualitative data about the health and social care needs of South Asian communities and how they are best met, training to improve cultural competency in services is difficult. This paper reports the findings of research with Sikh carers of a family member with vascular dementia living in Wolverhampton in the UK highlighting evidence that demonstrates the diversity of the Sikh community and challenges assumptions of homogeneity. The evidence base presented highlights the importance for understanding the psycho-social perspectives of living with vascular dementia for migrant communities and the need for health care professionals and service managers to apply a person-centered approach to care. This paper will help participants to consider person centered care as a model for practice for achieving cultural competency with migrant communities living with dementia in their countries of work.

### Biography

Karan Jutla has completed her PhD in 2011 at Keele University. She has worked as a Senior Lecturer in Dementia studies at the University of Worcester for five years. She recently joined the School of Nursing and Midwifery at De Montfort University in Leicester as a Lecturer in Health and Social Care. Alongside her employment, she also works as an Independent Consultant in Dementia Care supporting services to be culturally competent.

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**Petya Mineva<sup>1,2</sup>**<sup>1</sup>Trakia University, Bulgaria<sup>2</sup>Asen Zlatarov University, Bulgaria

## Asymptomatic carotid stenosis, arterial hypertension and cognitive impairment: A longitudinal population-based epidemiological study

**Objectives:** The aim of this epidemiological study is to estimate the significance of asymptomatic carotid stenosis (ACS $\geq$ 50%) and arterial hypertension (AH) for cognitive impairment (CI) in a population without signs and symptoms of stroke or TIA.

**Methods:** A total of 500 volunteers, aged 50-79 years, were enrolled and followed-up for cognitive performance. CI has been defined as a score between 24 and 27 of MMSE. Additional neuropsychological tests have also been conducted.

**Results:** CI in persons without any degree of ACS has been detected at only 13.85% (27/195). In comparison to the whole group investigated ( $p < 0.012$ ), as well as to the subgroup without ACS, CI has significantly increased in participants with ACS $<$ 50% (22.3% - 61/273,  $p < 0.01$ ) and especially with ACS $\geq$ 50% (40.6% - 13/32,  $p < 0.001$ ). Significant differences in the prevalence of CI have also been found between the two subgroups with ACS $<$ 50% or ACS $\geq$ 50% ( $p < 0.05$ ). Logistic regression analysis has been conducted between the group with ACS $\geq$ 50% and an age and sex adjusted control group. It has revealed no relation between CI and ACS $\geq$ 50%. However, multiple logistic regression analysis has shown that the combination of ACS $\geq$ 50% and systolic AH (SAH) attributes to CI (OR=10.7; 95%CI: 3.36-34.14;  $p = 0.0001$ ). CI has been presented as a decline in attention, verbal fluency and verbal working memory at the end of the study.

**Conclusion:** This pattern of CI, which is specific for a cerebral small vessel disease in long lasting AH, has supported the thesis that SAH and ACS $\geq$ 50%, not only ACS $\geq$ 50%, are attributable for CI.

### Biography

Petya Mineva has completed her PhD in 2006 from the Medical University, Sofia and Post-doctoral studies from the Trakia University, Medical Faculty, Stara Zagora. She is a Head of the Healthcare Department at the Medical College of the Asen Zlatarov University, Burgas and an Associate Professor and a Lecturer in Neurology at the Trakia University, Medical Faculty, Stara Zagora. She has published more than 20 papers in reputed journals.

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## Steven Benvenisti

Saperstein & Salomon, USA

### Spring break: A true story of hope and determination

Traumatic brain injury is the silent epidemic of our time. In spite of the millions who sustain a T.B.I. every year, very few medical professionals, legal scholars, employers and educators understand the reality of what the survivor and family members experience. The most powerful way to get a full understanding of the impact of T.B.I. is directly from the perspective of a survivor. I present this program as an attorney regarding a "law case" of an "All American" college student on vacation with his college friends. One night he was walking and was struck by a drunk driver's vehicle. His parents were called in the middle of the night and asked to consent to organ donation due to their son's severe traumatic brain injury and other catastrophic injuries. The parents' declined to consent to organ donation and instead got a room in the hospital to be with their son 24/7. After seeing the powerful photographs of the student in a coma, the audience is delighted to learn that he awoke after almost two (2) weeks, survived and had a full recovery. They are then astounded by the announcement that the attorney speaker before them is actually the T.B.I. survivor who is the feature of the program. The remainder of the program educates the audience about T.B.I. from the perspective of the survivor and family, while also providing valuable tools to help them in their own professional and personal capacities when dealing with Traumatic Brain Injury.

### Biography

Steven Benvenisti is a partner at one of the largest personal injury law firms in the United States of America, with offices in New York and New Jersey. For the past five (5) years, he has been included on the list of the National Trial Lawyers "Top 100 Trial Lawyers". He is honored to be the Vice-Chairman of the Board of Directors for Mothers Against Drunk Driving National and is also one of the directors of the Brain Injury Alliance. Steven has received over 30 awards, including a US Congressional Citation, US House of Representatives Certificate of Special Congressional Recognition and "Citizen of the Year". Steven authored Spring Break: A True Story of Hope and Determination about a famous case he handled involving a severely brain injured college student who received long-term inpatient and outpatient acute care and rehabilitation. Spring Break credits the doctors, nurses and rehabilitation professionals for the wonderful work that they do in improving the lives of patients and their families. He has been a keynote speaker at over 100 conferences and gladly donates 100% of his honoraria to charity.

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## Scientific Tracks & Abstracts (Day 1)



## Sessions:

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Day 1 June 30, 2016

- **Dementia**
- **Vascular Dementia**
- **Managing Dementia**

### Session Chair

**Rosalía Dacosta-Aguayo**  
Hospital Universitario Donostia, Spain

### Session Co-chair

**David Truswell**  
Independent Researcher Consultant Culture Dementia, UK

### Session Introduction

**Title:** An innovative method for the extraction and quantification of curcuminoids from a complex matrix

**Jarintzi Yared Rico Ruiz**, Euro-Nutec Premix SA de CV, Mexico

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## Behavioral and psychological symptoms in dementia in Hong Kong Chinese

**Yung Cho Yiu**

United Christian Hospital, Hong Kong

Behavioral and psychological symptoms of dementia (BPSD) constitute an integral component of cognitive impairment including, vascular dementia. They could contribute significantly not to caregiver stress but also to escalating healthcare costs.

**Method:** 100 consecutive patients attending a Memory Clinic, located in a district hospital in Hong Kong diagnosed to have vascular dementia were reviewed. The National Institute of Neurological Disorders and Stroke Association Internationale pour la Recherche et l'Enseignement en Neurosciences (NINDS-AIREN) criteria were used to establish the diagnosis of vascular dementia. The Global Deterioration Scale (GDS) was used to stage the severity of the disease. The assessment of BPSD was based on collateral clinical history, patients' subjective experiences and objective behavior. Neuropsychiatric Inventory was adopted as the assessment tool.

**Results:** 62% were GDS stage 4 and 38% stage 5. About 91% of stage 5 patients had BPSD and 8% in stage 4 patients. The prevalence of BPSD was about 40%. Amongst these, the pattern of various domains reviewed: individual behaviors include delusion (20%), hallucination (12%), depression (42%), apathy (21%), anxiety (16%), elation (12%), disinhibition (8%), aggression (11%), irritability (13%), aberrant motor behavior (11%), sleep and nighttime behavioral disorders (26%) and eating disorders (19%).

**Conclusion:** BPSD are frequent in vascular dementia of mild-to-moderate severity. Like other types of dementia, correct identification and evaluation of these symptoms is a crucial component of the clinical approach to vascular dementia.

### Biography

Yung Cho Yiu graduated from the University of Hong Kong in 1981. He was also nominated fellowship in various international colleges of physicians. He has been a specialist in Geriatric Medicine in Hong Kong for decades. Currently he is the Head of the Division of Geriatric Medicine and the Deputy Chief of Service of the Department of Medicine & Geriatrics in the United Christian Hospital, Hong Kong. His main interests are on cognitive impairment and urodynamics. He publishes widely in international journals. He has also validated the Hong Kong version of the Addenbrooke Cognitive Examination Revised (ACE-R).

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### Notes:



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## United Nations and World Health Organization engagement in treating global mental health, with a special focus on vascular dementia

**Daniela Fisichella**

University of Catania, Italy

A meaningful attention of International Law, and most of International Organizations, is drawn to mental health and to mental illness in XXI century. As a consequence of human rights huge extension, mental health is nowadays a target of international efforts striving to address both state behavior and international achievements. World Health Organization (WHO) is expressly engaged, but United Nations (UN) showed the path in early nineties, by UN General Assembly (UNGA) 46/119 of 17 December 1991. The protection of persons with mental illness and the improvement of mental health care, where mental health care and facilities are pointed out; and if mental illness couldn't be defined, Principle 4 (Determination of mental illness) of this Resolution is crucial to direct next improvements layout. From there, UN and WHO have been carrying on a unique approach to mental health, as proved by binding and not binding international acts, surveys, guidelines – as the 2010 WHO *mhGAP* Intervention Guide - adopted as a result of states consultation. UNGA Resolution 70/1 of 21 October 2015, Transforming Our World: the 2030 Agenda for Sustainable Development, envisaging 17 Sustainable Development Goals (replacing past 8 Millennium Development Goals to be gained in 2015 at last) is the last step on the road of a global approach to health, intended as physical and as mental within an holistic view of human beings. As stated in Declaration's Introduction, § 4, “no one will be left behind” and § 7 “A world with equitable and universal access to quality education at all levels to health care and social protection, where physical, mental and social well-being are assured.” The paper aims to investigate mental health as an international legal issue on a broad sense, meaning it not only as lack of mental illness, but in a comprehensive view and vascular dementia prevention above other mental diseases is perceived in a global frame of domestic economic and social balance.

### Biography

Daniela Fisichella is an Academic Researcher in International Law and International Organizations. Her teaching position covers all fields of Public International Law and European Union Law and currently, she teaches European Internal Market and Energy Law at the MA Course in Internationalization of Commercial Relations in Catania. Her main research interests are on European politics, EU Constitutionalism, International Human Rights. She's the Scientific Supervisor of NMUN Project promoted by UniOne, a professional training centre recognized by the Sicilian Region.

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## Rehabilitation in vascular dementia: Rehabilitation of speech and language manifestations of cognitive impairment in vascular dementia using a spaced repetition based approach

**David Gallego**

Hospital Miguel Domínguez, Spain

**Introduction:** One of the most common clusters of manifestations of cognitive impairment associated to vascular dementia is related to the handling of language. Regarding rehabilitation approaches, spaced repetition based techniques offer advantages in cases on mild and severe cognitive deterioration because they allow the automation in the use of Word families of key importance in daily communication for patients with severe impairment in cognitive processing.

**Objective:** To analyze the effectiveness of spaced repetition based rehabilitation of speech language in vascular dementia.

**Method:** 2 patients diagnosed of mild vascular dementia and 1 patient diagnosed of severe vascular dementia were submitted to rehabilitation using spaced repetition exercises with vocabulary organized into Word families related to basic actions and events from their daily life. Each patient was stimulated with three groups of twenty words each and supported by graphic material. Measures in the naming of words when confronted with the item were made pre-rehabilitation and post-rehabilitation monthly over a period of 8 months.

**Results:** All patients improved in denomination of chosen items and kept that improvement during periodical assessments over the 8 month periodical though a slight declination in performance was observed from the 6<sup>th</sup> month. Case 1 named 8, 5 and 7 words at baseline. After rehabilitation, performance improved to 16, 12 and 15 and declined to 13, 11 and 12 after the 8 month period. Baseline in Case 2 was 6, 8 and 9 words and improved to 15, 18 and 13 after rehabilitation with a decline to 13, 15 and 10 after the 8 month period. Case 3 performed 2, 4 and 7 at baseline and improved to 10, 13 and 11 after rehabilitation with a decline to 10, 11 and 9 after the 8 month period.

**Conclusion:** Spaced repetition based exercises is a useful asset when dealing with vocabulary re-acquisition in patients affected by vascular dementia and offers a reasonable prognosis over time despite neurodegenerative factors.

### Biography

David Gallego is graduated in speech therapy from Valladolid University, Spain, with 10 years of experience in the speech and therapy rehabilitation field related to brain damage (BD). He recently moved to Dublin, Ireland but keeps collaborating with hospital Miguel Domínguez from Galicia, Spain where he worked as head of the speech therapy service for the last 4 years. He also collaborates with the Speech Therapy School from Valladolid University and is collegiated in the Speech Therapy Association of Castilla León.

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## Diagnosing vascular dementia in South Asian communities: The importance of a culturally appropriate assessment tool

**Harjinder Kaur**

Black Country Partnership Foundation Trust, UK

There is a current estimate of nearly 25,000 people with dementia from Black, Asian and Minority Ethnic (BAME) communities in England and Wales. This number is expected to grow to nearly 50,000 by 2026 and over 172,000 people by 2051. This is nearly a seven-fold increase in 40 years. It compares to just over a two-fold increase in the number of people with dementia across the whole United Kingdom (UK) population in the same time period. BAME communities in the UK are not just getting older but they are also growing in numbers. It is therefore extremely important to have a tool that is suitable to assess dementia amongst these communities so that diagnosis is made early and that patients get the support and treatment they need and require. Currently, this area of work is underdeveloped and a 'culturally appropriate' diagnostic tool is yet to be developed. This presentation discusses current diagnostic tools for Vascular Dementia arguing the case for the Rowland Universal Dementia Scale (RUDAS) as a tool for diagnosing Vascular Dementia in BAME communities who may not only lack English fluency but also literacy skills. The information presented is based on the speaker's experience of working with people from South Asian communities, to share good practice and raise awareness about some of the challenges and barriers for diagnosing Vascular Dementia. Though based in the UK, this information is transferable to other countries working with people from different cultural backgrounds.

### Biography

Harjinder Kaur is a Community Psychiatric Nurse for Wolverhampton City. In 2001, she was appointed as the Asian Link nurse with a specialist role to increase contact between specialist old age psychiatry services and older people from Black, Asian and Minority Ethnic (BAME) communities. She has played an important role in disseminating information about dementia and related conditions and in educating the South Asian community and professionals on the help available. Since her appointment, she has made remarkable efforts to ensure that the BAME communities residing in Wolverhampton have fair access to services and has consequently increased the diagnosis rates of dementia within these often hidden and marginalised communities.

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### Notes:

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## Making memories matter

**Helen Fountain**

University of Oxford, UK

Oxford University Museums Partnership has an excellent track record of delivering museum community engagement services to elder people in Oxford and Oxfordshire. The seminar will focus on how reminiscence and museum activities are used in a variety of ways (including oral history projects, artistic projects, drama projects and music projects) to engage with older people living with Dementia in community and healthcare settings. The seminar will offer delegates the opportunity to participate in practical skills sharing which will equip them with techniques for using reminiscence as a therapeutic activity for people living with Dementia. It will focus on the positive impact that participation in such activities can have on wellbeing, both for the older person and their carers, drawing on UK research findings to make the case for reminiscence as an activity for enhancing quality of life for elder people living with Dementia and their carers.

## Biography

Helen Fountain is the Reminiscence Officer at the Oxford University Museums Partnership. Following University, she began working in the Social Care sector in 1997, working with vulnerable young people at Coventry YWCA and with homeless people at Coventry Cyrenians, followed by a role with Coventry City Councils' Social Services Department commissioning and monitoring support services for elder people. A part time role at the Herbert Art Gallery began to inspire the idea of the creative potential of partnerships between elder people and the heritage sector. Following her Master's Degree in Museum Studies from the University of Leicester, she took up her current post in 2009. The role of Reminiscence Officer for Oxford University Museums has offered fantastic opportunities to devise and deliver museum activities for older people including a reminiscence outreach services, bespoke reminiscence projects, community exhibitions, intergenerational events and working with local NHS Partners to deliver reminiscence activities to older people in hospital settings. In 2015 she, along with the Oxford Institute for Population and Ageing carried out research into the impacts of her work, the findings are due to be published later this year. She is also a Dementia Champion with the Alzheimer's Society Dementia Friends scheme.

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## Notes:

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## Cognitive impairment in patients with arterial hypertension as a predictor of Dementia

Saule T Turuspekova<sup>1</sup>, E Atantayeva<sup>1</sup>, D Mitrokhin<sup>1</sup> and L Nurgaliyeva<sup>2</sup><sup>1</sup>Kazakh National Medical University, Kazakhstan<sup>2</sup>Almaty City Clinical Hospital #1, Kazakhstan

**Introduction:** Arterial hypertension (AH) is considered as one of the causes of vascular dementia. Brief Montreal Cognitive Assessment Scale (MoCA) can be sensitive to the detection of cognitive impairment (CI) in AH.

**Objective:** To evaluate the validity of the use of MoCA test for the detection of CI in patients with AH lasting no more than 10 years.

**Material & Methods:** Observed 60 patients with a higher education (females -24, males -36) aged 40-60 years with AH lasting no more than 10 years. To determine the degree of CI, MMSE and MoCA were used.

**Results:** 80% of patients with AH are pre-dementia CI which is identified in the application of MoCA-test, whereas MMSE was not informative. According to MoCA average value was  $19.5 \pm 2.5$  points and according to the MMSE - 30 points. At the same time moderate CI ( $22.5 \pm 2.5$  points) detected in 56.6% of cases, heavy CI ( $16.5 \pm 2.5$ ) was diagnosed in 23.3%. Among patients with a duration of up to 5 years of AH is well coped with the tasks of MoCA 40%, 60% of detected light CI. In patients with AH from 5 to 10 years, MCI identified in 53.4% of cases ( $21 \pm 1.0$  points), 46.6% of patients had a dementia (14-19 points).

**Conclusions:** The observed decline in cognitive function in patients with AH that can possibly be regarded as a predictor of dementia. These results make it necessary and justified to make use of MoCA-test for the universal screening for CI.

### Biography

Saule T Turuspekova (MD, PhD) is a Neurologist of highest category and Professor of the Department of internship and residency in Neurology of KazNMU. In 1995, she completed PhD Thesis, "Vegetative-vascular disorders in cerebral manifestations of diabetes mellitus" and in 2010-Doctoral thesis - "The influence of small doses of ionizing radiation on the nervous system". She has published over 100 scientific papers which were presented at international conferences in many countries. She received state scholarship for talented young scientists of the Ministry of Science of the Republic of Kazakhstan. She served as the Coordinator of the Russian Youth Academy of Sciences (Samara), 2015-the personal physician of the Kazakhstan astronaut Aydin Aimbetov. She is the Member of the ESO, WSO, «Neurosciences», EAN.

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## Keynote Forum (Day 2)



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**David Truswell**

*Culture Dementia, UK*

## Early stage work with raising awareness about vascular dementia in the African-Caribbean community in London

London, the UK capital is home to 58% of all those who identified themselves as African-Caribbean in the UK 2011 National Census. It is demographically the oldest of the Black populations in the Census categories and proportionally has a higher rate of dementia than the White UK majority. With research indicating that vascular dementia and early onset dementia are a growing issues for Caribbean men under the age of 65 strong cultural beliefs lead many of those most at risk to dismiss any mainstream efforts at preventative health education. Denial of problems and refusal to seek help or diagnosis can often lead to a major crisis before there is any engagement with professional support services and frustrate efforts to develop ongoing links with services. Culture Dementia UK a voluntary organization has been working on awareness raising and providing support in the African-Caribbean community in London. The presentation explores how the African-Caribbean cultural narrative of independence and resilience mitigates against help-seeking in dementia and some of the approaches adopted by Culture Dementia UK to raise awareness and encourage people to look for support.

### Biography

David Truswell has worked in community based mental health services in the UK for over thirty years developing services for people with complex care needs and enduring mental health problems in a career spanning the voluntary sector, local authority services and the NHS. From 2009 – 2011, he was the Dementia Implementation Lead for Commissioning Support for London, working with commissioners across London to improve dementia services. He is an independent writer and researcher on dementia support and services for Black and minority ethnic communities, working with a number of projects and initiatives.

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## Howard J Federoff

University of California, USA

### Blood biomarkers in preclinical Alzheimer Disease

Our group has studied a longitudinal cohort of seniors, >75 yrs, to discover and validate peripheral blood measures that can accurately predict which cognitively normal subjects will progress to amnesic Mild Cognitive Impairment (aMCI) or Alzheimer disease (AD) in a three year period. We initially reported on plasma metabolites which are now more accurate as a diagnostic. We have extended this work on plasma metabolomics and have discovered and validated a panel of 24 analytes that predict phenoconversion to Alzheimer's disease with accuracy of >96%.

### Biography

Howard J Federoff oversees the clinical, medical educational, and research missions, as a Vice Chancellor for Health Affairs and CEO of UC Irvine Health. He investigates gene therapy and neurodegenerative diseases. He has published greater than 250 articles and serves on the editorial boards of five journals. He chaired the NIH Recombinant DNA Advisory Committee and currently chairs the Gene Therapy Resource Program for NHLBI. He is President of the American Society for Experimental Neurotherapeutics. He received MS, PhD, and MD degrees from the Albert Einstein College of Medicine, did his internship, residency, and clinical and research fellowships at Massachusetts General Hospital/Harvard Medical School. He is a Fellow of the AAAS and National Academy of Inventors.

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**Jane Verity**

Dementia Care, Australia

## A new whole systems approach to rehabilitation in dementia

The *Spark of Life* Philosophy provides an internationally awarded whole systems approach to rehabilitation in dementia care. Initially developed in Australia this philosophy is now implemented in 9 countries and is gaining momentum and interest around the world. The award (from the International Association of Homes and Services for the Ageing) was given in recognition for the unique focus on building the strength and abilities of people with dementia and those who care for them. The philosophy has been well researched and is based on sound scientific foundations. Specific outcomes include: the activation of dormant abilities such as language, memory, ability to socialize and interest in engaging in life. The author who is the Founder of *Spark of Life* and CEO of Dementia Care Australia will provide a leadership perspective of how this philosophy is implemented as a whole systems approach and how this rehabilitation mindset is both empowering and providing a financially sustainable model for dementia care across the globe. The presentation will be brought alive with documentary footage showing people with dementia involved in this program as well as research findings and case studies.

## Biography

Jane Verity is the Founder of *Spark of Life* and CEO of Dementia Care Australia. She is a world leader and pioneer in the social and emotional care of people with dementia. Originally from Denmark and now living in Melbourne, Australia, she is an Occupational and Family Therapist and a Master Practitioner in NLP. She has earned the highest international accreditation as a professional speaker and is known for her life changing presentations. She has authored 2 internationally published books and contributed to others. She is also a regular contributor to journals and an international key note presenter.

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## Panteleimon Giannakopoulos

University of Geneva, Switzerland

### Arterial spin labeling may contribute to the prediction of cognitive deterioration in healthy elderly individuals

We investigated whether subtle cognitive deterioration in healthy elderly individuals could be predicted by ASL imaging and EEG markers. A longitudinal study included 75 stable controls (sCON) and 73 deteriorated controls (d-CON) at 18-month clinical follow-up and 65 patients with mild cognitive impairment (MCI). Continuous EEG was recorded during a n-back working memory task and two-dimensional pulsed ASL was performed at the baseline visit. Reduced ASL in the posterior cingulate cortex was associated with the development of subtle neuropsychological deficits. Three EEG indices distinguished the two control groups: alpha and beta even related desynchronization (dCON > sCON) and beta inter-trial coherence (dCON < sCON). These results will be discussed as a paradigm of predictive biomarkers in preclinical forms of dementia.

#### Biography

Panteleimon Giannakopoulos has completed his MD from the University of Athens and is board certified psychiatrist and psychotherapist from 1999. He completed his Post-graduate training in London and Paris before taking the chair of old age psychiatry in Geneva. He has also a full training in cognitive neurosciences focusing on dementing conditions. He was the chairman of the Department of Psychiatry in Geneva from 2005 to 2015 before being appointed as medical director of the Forensic Psychiatry for the Geneva country. He has published more than 220 peer-reviewed articles (H index: 42), and has been serving as an Editorial Board Member and reviewer of repute.

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## Susan Scanland<sup>1, 2</sup>

<sup>1</sup>Dementia Connection® LLC, USA<sup>2</sup>University of Scranton, USA

### Medication management of behaviors in vascular/mixed dementia in long term care: Successful case studies

Research trials on cholinesterase inhibitors, memantine and antidepressants for behavioral and psychological symptoms in vascular/mixed dementia in long-term care settings are nearly non-existent. The absence of approved medications for vascular dementia offers practicing clinicians few treatment options. Off-label use of Alzheimer's approved drugs and antidepressants are more practical than risking pneumonia, hip fracture, cerebrovascular accidents and dysphagia from anti-psychotic use for vascular/mixed dementia behaviors. Long-term care admissions for vascular dementia will rapidly increase with Baby Boomers diagnosed with Type II diabetes, obesity and cardiac or cerebrovascular risk factors. Behaviors of vascular and mixed dementia; often compounded by vascular depression, significantly impact quality of life of long-term care residents, cohabitant residents, family members and nursing staff. A gerontological nurse practitioner/dementia consultant will review behavioral and mood responses to cholinesterase inhibitors, memantine and anti-depressants in nursing home residents diagnosed with vascular and mixed dementia. Case studies and informal surveys summarizing four years of long-term care dementia management will be presented.

### Biography

Susan Scanland is a Gerontological Nurse Practitioner for 34 years and also a Certified Dementia Practitioner (CDP). She is one of two nurse practitioners worldwide holding the credential of Certified Speaking Professional (CSP) from the National Speakers Association. She has presented at over 600 meetings in 42 states, Canada and the Caribbean through her business Dementia Connection®. She is a Faculty Specialist at the University of Scranton in Pennsylvania. Her clinical practice has been limited to dementia, depression and delirium management for the past 12 years in long-term care and telehealth.

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## Scientific Tracks & Abstracts (Day 2)



## Sessions:

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Day 2 July 01, 2016

- **Advances in Dementia Test**
- **Dementia Pathophysiology**
- **Dementia Care and Nursing**

### Session Chair

**Panteleimon Giannakopoulos**  
University of Geneva, Switzerland

### Session Co-chair

**YUNG Cho Yiu**  
United Christian Hospital, Hong Kong

### Session Introduction

**Title:** Impacts of conformational geometries in fluorinated hydrocarbons

**Tim Brandenburg**, Helmholtz Zentrum Berlin, Germany

# European Chemistry Congress

June 16-18, 2016 Rome, Italy

## Adults communicating together – A.C.T. care group

**Ann Marie Selfridge**  
University at Albany, USA

Adults Communicating Together, A.C.T. is a comprehensive educational/social program that focuses on strengthening the brain functions of people diagnosed with Alzheimer's and Dementia. The A.C.T. program uses an innovative educational classroom model to engage participants with AD/D in exercises that promote learning and enhance cognitive stimulation. The A.C.T. Care Group recognizes the importance for people with AD/D to be involved in structured and closely managed educational/social groups that improves people's ability to focus on their surroundings and increases participation in daily tasks to the highest possible levels. A.C.T. Care professionals are trained to provide a nurturing and secure environment for all participants. The A.C.T. staff implements techniques that encourage people to maintain their health/hygiene, independence and ability to keep involved in activities of daily living. The A.C.T. program focuses on exercises in memory, physical movement and motor strengthening skills. Using a curriculum that provides repetitious consistency and structure, participants are able to successfully concentrate on tasks and keep aware of their surroundings. Participants have also demonstrated decreased wandering tendencies, less restlessness/anxiety, reduced episodes of incontinence and have desirable weight gains. The A.C.T. program goal is to increase health and cognitive functions, maximize independence, gain and maintain physical strength and provide an opportunity for people with AD/D to have a meaningful quality of life. The A.C.T. Team implements unique program strategies/methods, in an outpatient Social Adult Day setting that give people a chance to live at home with their families and remain active members in their communities.

### Biography

Ann Marie Selfridge is the President of the A.C.T. Care Group. She is a graduate from the University at Albany in New York State. She worked as part of the Administration team in Nursing/Rehabilitation facilities in New York City and has received the following awards: Certificate of Special Congressional Recognition to Recognize Initiative, Service and Achievement for Voluntary Public Service from United States Congress, Recognizing Service to Developmentally Disabled Adults and Children- a citation from New York State Assembly. He has a dedication towards making a good life for people with developmental disabilities and received a certificate of Merit from the NYS Assembly. He also received Honor for being an Exceptional Friend to the Bensonhurst Center for Rehabilitation and Healthcare and Certificate of Achievement from Senator Martin J Golden. He also received Proclamation Recognizing Valuable Service to the Community from New York City Council Citation.

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### Notes:

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## Elder self-neglect and dementia: Challenges for community based teams

**Caitlin Hildebrand**

Veterans Health Administration and American Care Quest Hospice, USA

Elders with dementia are significantly more likely to neglect their own needs, and determining the role of cognitive impairment is a key factor in creating successful interventions for change. Community based care teams, be they clinic based, or from home health, are similarly confronted with the challenge of how to support independence while promoting wellness and safety. Through careful analysis of the multi-factorial nature of self-neglect, teams can create care systems that honour autonomy and prevent placement. Creativity, flexibility, and acceptance of the “dignity of risk” allow care providers to make an impact while supporting aging in place. Reflecting on recent patients will allow a close intimate consideration of elders, who self-neglect and the risks and benefits of intervention.

### Biography

Caitlin Hildebrand is an Adult and Gerontology Nurse Practitioner with significant experience in community based care teams, through the Program of All Inclusive Care for the Elderly (PACE), home health and hospice and quality improvement. With Masters in Health Administration and Nursing from University of California San Francisco and University of Pennsylvania, she is a published scholar on elder self-neglect and dementia. She has a passion for programs that support Aging in Place and a palliative approach to care for all frail people.

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## The influence of music during rehabilitation- a case story of anoxic brain damage

Elisabeth L'orange Fürst

University of Oslo, Norway

Eight years ago a 53 years old man was rescued from a cardiac arrest that lasted 3/4 of an hour, an incident that subsequently led to a severe brain damage and the diagnosis of dementia. This man was not just anybody, he was my husband. In this sudden moment, I was thrown into a situation of participant observation, trained as I was in anthropology. In this paper, I present some reflections from a perspective of being a next of kin as well as social researcher. My phenomenological focus will concentrate on the amazing influence that music seems to have had on his recovery, especially the way it seems to have encouraged his emerging sense of self and identity. Even though he is suffering from severe cognitive problems with orientation in time, space and vision, he is physically on his feet, walking around in a rather stable manner. While it seems that music has been important for his condition from the start, the last five years he has attended therapeutical music lessons twice a week, singing songs accompanied by the teachers' guitar. Astonishingly he has been able to learn new melodies as well texts, and lately we have observed emotional responses to the music that he performs which has not been observed before.

### Biography

Elisabeth L'orangeFürst has completed her PhD from The University of Oslo, Norway and Postdoctoral studies at The University of Uppsala, Sweden. Since 2001, she is Professor at the Department of Social Anthropology, University of Oslo. She has published more than 50 papers in reputed journals and anthologies as well as three books and one edited volume. She has also been the editor of a *Norwegian Journal in Social Sciences*.

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## Safeguarding adults at risk through the use of person centered thinking tools. Embedding person centred frameworks in social care settings

**Tanya Clover**

Clover Care Consultants, UK

Reform has taken place in England with the implementation of the Care Act (2014) and its expectation that all agencies, statutory and otherwise, must cooperate. Such cooperation, however, risks marginalising the most important voice, that of the abused person themselves. When acts of abuse in care settings are investigated, it often results in the dismissal or removal from roles of individuals deemed responsible for the acts. To prevent the reoccurrence of abuse we must look beyond the perpetrator to the systems that surround them. Protection will not come about simply from telling people what is right or wrong. If it were, society would enact laws and all abuse would cease. With the existing raft of legislation and human rights declarations worldwide we can see that this has not happened. Person-centred thinking tools are both a device and a process that can be used to drive and sustain change for individuals, teams, organisations, communities and societies. Their ultimate goal is to ensure that individuals have more choice and control through an ongoing loop of listening, learning and actions – in essence, realising their uniqueness as a person of equal standing to others. Person-centered thinking tools can support the transition from people living with dementia being passive recipients of care to their being recognised as equal and valued members of society. They herald a new progression, as services aspire to move beyond person centred support towards people living with dementia being attributed citizenship.

### Biography

Tanya Clover has been involved in supporting organisational change across the health and social care sectors for over 20 years. Utilising her extensive knowledge of the practical application of person centered care models; she has a proven success record in directly influencing the experiences and outcomes for people living with dementia. Previously a Practice Development Consultant and Trainer for the University of Bradford School of Dementia Studies, she remains an accredited Dementia Care Mapping™ trainer for the University. She has spoken at the UK Dementia Congress and has published 2 articles relating to the use of Person Centred Thinking Tools.

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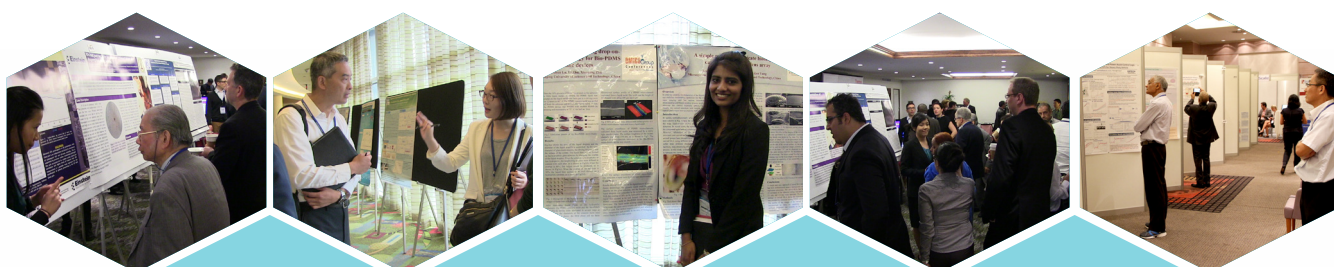
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## Posters



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## Assessment of cognitive function in patients with chronic alcoholism

Saule T Turuspekova<sup>1</sup>, D Mitrokhin<sup>1</sup>, M Khozhakhmedova<sup>1</sup>, D Meirbek<sup>1</sup>, A Naldibekova<sup>1</sup>, E Kudabaev<sup>2</sup>, E G Suleymenova<sup>3</sup> and G Abdybaeva<sup>3</sup><sup>1</sup>Kazakh National Medical University, Kazakhstan<sup>2</sup>City Clinical Hospital No1, Kazakhstan<sup>3</sup>City Drug Treatment Center of medical and social correction Almaty, Kazakhstan

**Background:** In the current economic conditions, alcohol addiction is one of the most pressing problems in health and in social terms, contributing to the emergence of various diseases, antisocial behaviour and conflict situations in the family and in the workplace. Alcohol is considered to be the most common exogenous toxins that cause a wide range of neurological, psychiatric and neuropsychological disorders.

**Objective:** To identify the state of the higher brain functions in patients with chronic alcoholism.

**Material & Methods:** Observed 30 patients (males) with chronic alcoholism lasting no more than 10 years aged 25-50 years. To determine the degree of cognitive impairment used Mini-Mental State Examination (MMSE), a brief scale of the Montreal Cognitive Assessment (MoCA), Mini-Cog test, proofreading test Bourdon, test for mirroring, test for reciprocal coordination.

**Results:** 83.3% of patients with chronic alcoholism identified cognitive impairment. According to MoCA average value was 20.8 points. MMSE and Mini-Cog tests were not informational. In 33.3% of patients showed a significant violation of the opto-spatial activities, loss of memory, attention and thinking (average score  $13.5 \pm 3.5$ ), moderate decline - 30% of patients (average score  $21.5 \pm 1.5$ ), minor disorders were observed in 20% of patients ( $24.5 \pm 0.5$ ). Also, in patients with chronic alcoholism were observed neurodynamic disorders in the form of a significant reduction in the speed of execution of tasks (20-30 minutes).

**Conclusions:** Thus, in chronic alcoholism most frequently observed neurodynamic disorders, loss of memory, attention, thinking and opto-spatial disorders.

### Biography

Saule T Turuspekova (MD, PhD) is a Neurologist of highest category and Professor of the Department of internship and residency in Neurology of KazNMU. In 1995, she completed PhD Thesis, "Vegetative-vascular disorders in cerebral manifestations of diabetes mellitus" and in 2010-Doctoral thesis - "The influence of small doses of ionizing radiation on the nervous system". She has published over 100 scientific papers which were presented at international conferences in many countries. She received state scholarship for talented young scientists of the Ministry of Science of the Republic of Kazakhstan. She served as the Coordinator of the Russian Youth Academy of Sciences (Samara), 2015-the personal physician of the Kazakhstan astronaut Aydin Aimbetov. She is the Member of the ESO, WSO, «Neurosciences», EAN.

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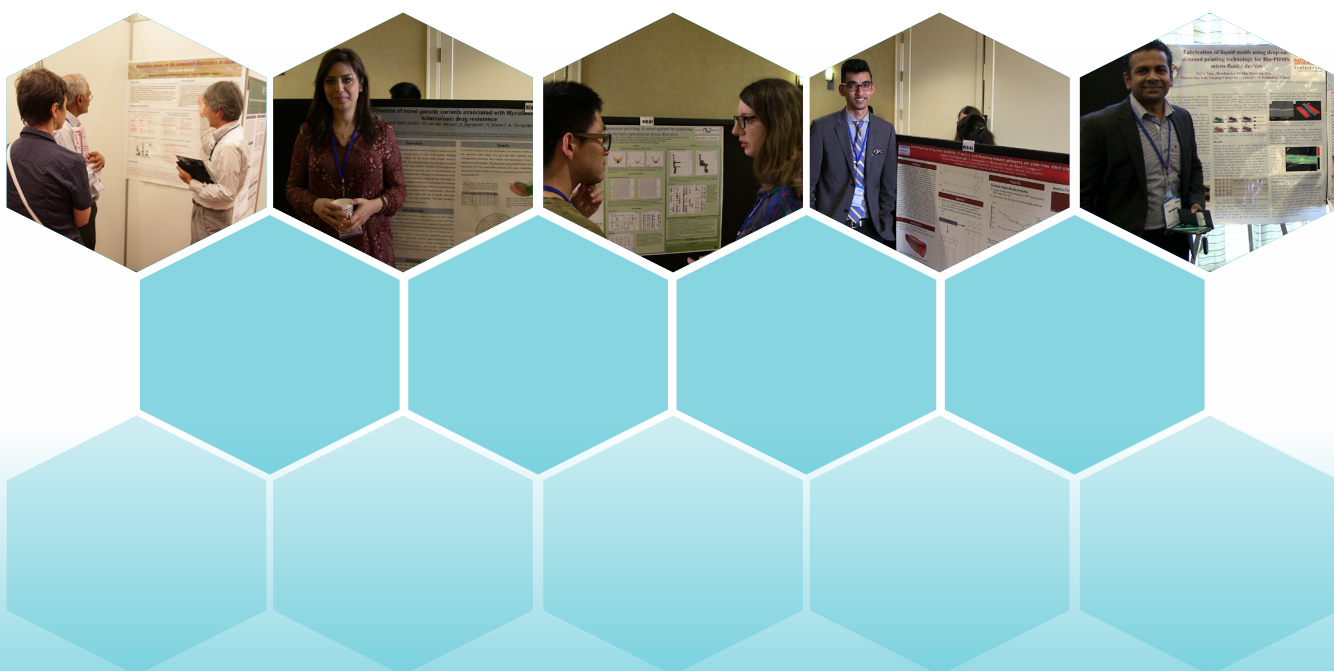
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## e-Posters



# European Chemistry Congress

June 16-18, 2016 Rome, Italy

## Cognitive impairment in aging type 2 diabetes mellitus

Fan Fan<sup>1</sup>, Wenshan Lv<sup>1,2</sup>, Hongwei Yu<sup>3</sup>, Jan M Williams<sup>1</sup>, Jerrell D Sims<sup>1</sup>, Matthew R Elliott<sup>1</sup>, Ying Ge<sup>1</sup>, Yangang Wang<sup>2</sup> and Richard J Roman<sup>1</sup><sup>1</sup>University of Mississippi, USA<sup>2</sup>Affiliated Hospital of Qingdao University, China<sup>3</sup>Medical College of Wisconsin, USA

Alzheimer's disease (AD) and type 2 diabetes mellitus (T2DM) are two progressive and devastating health disorders afflicting millions of people worldwide. Studies have suggested that individuals who suffer from T2DM have higher risks of AD. However, the underlying mechanisms remain to be determined. The present study examines whether autoregulation of cerebral blood flow (CBF) is impaired in aging T2DN rat, a T2DM strain, and whether this impairment contributes to AD. The levels of glucose (422±32 vs. 94±3mg/dL) and glycated hemoglobin (HbA<sub>1c</sub>, 11.5±0.2 vs. 4.3±0.1%) were higher in 12-18 months old T2DN than in age matched SD control rats. CBF rose by 137±15% and 36±5%, respectively, in T2DN and SD rats when MAP was increased from 100 to 180 mmHg. The expression of Amyloid  $\beta_{42}$  (A $\beta_{42}$ ) and p-tau (S416) was significantly higher in the brains of T2DN vs. SD rats. Elderly T2DN rats exhibited learning and short and long term memory disabilities as the short term (2-hour; T2DN 96±12 vs. SD 13±3 seconds) and long term (24-hour; T2DN 105±15 vs. SD 8±2 seconds) latency of escape were longer in an eight-arm water maze test, and spent less time in the target arm 48 hours after training (T2DN 3.4±2.6 vs. SD 45.0±1.7%). These findings indicate that T2DM is associated with an impaired autoregulation of CBF with aging and this may contribute to cognitive impairment and AD.

### Biography

Fan Fan (MD, MS) is an Assistant Professor at University of Mississippi Medical Center, USA. Her research focuses on the genetic basis of the impaired myogenic response and autoregulation of renal and cerebral blood flow and end organ damage in aging, hypertension and diabetes. She has published more than 30 papers in peer-reviewed journals and is currently serving as an Editorial Board Member and reviewer for several journals. She is currently funded by NIH to study roles of Adducin gamma (NIH/NIA), CYP4A1 and 20-HETE (NIH/NIGMS) on aging and hypertension related cerebral vascular and renal diseases.

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## Transcatheter laser revascularization of cerebral vessels in the treatment of atherosclerotic lesions accompanied by the development of vascular dementia

**Ivan V Maksimovich**

Clinic of Cardiovascular Diseases named after Most Holy John Tobolsky Moscow, Russia

**Background:** The number of patients suffering from vascular dementia is constantly growing worldwide. This research investigates the effectiveness of the method of brain transcatheter laser revascularization in the treatment of ischemic lesions accompanied by vascular dementia.

**Materials & Methods:** 1238 patients aged 29-81 (average age 75) suffering from various types of atherosclerotic lesions of cerebral vessels were examined undergoing computed tomography of the brain (CT), magnetic resonance imaging (MRI), scintigraphy of the brain (SG), rheoencephalography (REG), cerebral multi-gated angiography (MUGA), laboratory diagnosis, and assessment of the severity of dementia (CDR), cognitive disorders and everyday life disorders (MMSE), the Barthel index (IB). 730 (58.97%) patients 525 (71.92%) male, 205 (28.08%) female, also had vascular dementia. 698 patients were selected for transcatheter treatment. According to the severity of dementia, the patients were divided into the following groups: CDR-1 - 378 (54.15%) patients; CDR-2 - 209 (29.95%) patients and CDR-3 - 111 (15.90%) patients. For main intracranial arteries revascularization high-energy laser systems were used, for distal intracranial branches revascularization - low-energy ones. Good immediate angiographic outcome manifested in vascular lumen and patency restoration and collateral revascularization was obtained in 715 (97.96%) cases. Clinical outcome depended on severity of dementia and timing of surgery. After the interventional laser treatment, a practically complete restoration of motor functions and intellectual ability, a decline of cognitive disorders to MMSE 27-30, IB 90-100 were considered a distant good clinical outcome; a partial restoration of motor functions and intellectual ability, IB 75 -85 were considered a satisfactory clinical outcome; a partial restoration of motor functions and intellectual ability, IB 60-70 were considered a relatively satisfactory clinical outcome.

**Results:** In 12 months, various groups of the treated patients demonstrated the following clinical outcome: Good clinical outcome (almost complete reduction of cognitive impairment) in Group CDR-1 was obtained in 306 (80.95%), cases, CDR-2 - 91 (43.54%), CDR-3 - 9 (8.11%). Satisfactory clinical outcome (partial reduction of cognitive impairment) in CDR-1 was obtained in 58 (15.34%), cases, CDR-2 - 69 (33.01%), CDR-3 - 33 (29.73%). Relatively satisfactory clinical outcome (partial reduction of cognitive impairment) in CDR-1 was obtained in 14 (3.70%), cases, CDR-2 - 49 (23.44%), CDR-3 - 69 (62.16%). No negative effect of the transcatheter surgery was observed. It should be noted that the restoration of motor functions went on slower than the restoration of intellectual ability and to a greater degree depended on the size of the post-ischemic cyst and the timing of transcatheter treatment after the stroke.

**Conclusions:** Vascular dementia mostly develops against the background of distal lesions of intracranial arterial branches. The method of transcatheter laser revascularization of cerebral vessels is an effective interventional method of small traumacy for the treatment of vascular lesions of the brain. It allows restoring the patency and lumen of vessels of various diameters simultaneously causing collateral revascularization of the ischemic area and near located tissue. The effect persists for a long time and promotes regression of vascular dementia greatly improving the patients' quality of life.

### Biography

Ivan V Maksimovich, MD, is a ISTAR member, and the Head Physician of Clinic of Cardiovascular Diseases named after Most Holy John Tobolsky (Moscow, Russia) since 1993. One of the major problems the clinic deals with is the diagnosis and treatment of various brain lesions including Alzheimer's disease. For a long time he has fully concerned himself with the diagnosis and treatment of Alzheimer's disease. Over the past 15 years he has published over 60 scientific works on this subject.

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## Transcatheter treatment of vascular dementia with Binswanger's disease

**Ivan V Maksimovich**

Clinic of Cardiovascular Diseases named after Most Holy John Tobolsky Moscow, Russia

**Background:** Due to increasing lifespan, the number of patients with Binswanger's disease is growing. This research is dedicated to the effectiveness of brain transcatheter laser revascularization in the treatment of vascular dementia and Binswanger's disease.

**Materials & Methods:** 14 patients, 9 male (64.29%) and 5 female (35.71%), aged 58-81 (average age 77) with Binswanger's disease were examined undergoing computed tomography of the brain (CT), magnetic resonance imaging (MRI), scintigraphy of the brain (SG), rheoencephalography (REG), cerebral multi-gated angiography (MUGA), laboratory tests, and assessment of the severity of dementia (CDR), cognitive disorders and everyday life disorders (MMSE). The examination revealed: general invaluable changes of the cerebral cortex were detected in all 14 cases; intracranial atherosclerotic lesion type - all cases; multiple arteriovenous shunts of the white matter the brain - all 14 cases; manifestations of leucoaraiosis - all cases; general invaluable changes of the cerebral cortex - all 14 cases; single postischemic microcysts (3-4 mm) of the white matter of the brain - 1 case; multiple microcysts including the merged ones - 13 cases; signs of unocclusive hydrocephalus - all 14 cases; diffuse atherosclerotic lesion of cerebral arteries - 12 cases; stenosis of large intracranial arterial branches - all 14 cases; deviation of intracranial branches - all 14 cases; multiple stenotic and occlusive lesions of the terminal parts of intracranial branches - all 14 cases; depletion of the capillary bed in the white matter of the brain - all 14 cases; development of multiple large and small arteriovenous shunts in the white matter of the brain caused by capillary blood flow disorders, which led to early venous dumping - all 14 cases; dementia CDR-1 - 6 patients, CDR-2 - 8 patients. All the patients underwent transcatheter laser revascularization. Low-energy laser systems were used for revascularization of distal intracerebral branches. Postoperatively, the patients underwent desagrigatory, anticoagulatory and vasodilator therapy following advanced interventional radiology schemes. Clinical evaluation of postoperative results was carried out using the CDR.

**Results:** Good immediate angiographic outcome manifested in the restoration of lumen and patency of the affected vessels as well as in collateral revascularization was obtained in all 14 cases. Clinical outcome: Good clinical outcome (complete recovery of mental and motor functions) was obtained in 6 (42.86%) patients and satisfactory clinical outcome (incomplete recovery of mental and motor functions) was obtained in 8 (57.14%) patients. No negative effect was observed after the interventions.

**Conclusions:** The method of brain transcatheter laser revascularization is an effective one in the treatment of atherosclerotic lesions of brain's white matter accompanied by the development of vascular dementia and Binswanger's disease. Restoration of intracerebral blood flow can significantly reduce the level of mental, cognitive, motor disorders and return patients to their active daily life.

### Biography

Ivan V Maksimovich, MD, is an ISTAART member, and the Head Physician of Clinic of Cardiovascular Diseases named after Most Holy John Tobolsky (Moscow, Russia) since 1993. One of the major problems the clinic deals with is the diagnosis and treatment of various brain lesions including Alzheimer's disease. For a long time he has fully concerned himself with the diagnosis and treatment of Alzheimer's disease. Over the past 15 years he has published over 60 scientific works on this subject.

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## Subcortical dementia developed at high altitude in Himalayas – an army case study investigation with MMSE and new UMACE diagnostic tool

**Mangal Kardile**

Mental Health Aims, India

This study aims to use newly developed cognitive impairment diagnostic tool UMACE & MMSE to assess development of subcortical-dementia symptoms in a 52 year old Indian-Army-doctor when posted at high-altitude-in-Himalayas about 6000-10000 feet. The patient started developing Memory & Cognitive Impairments at the age of 49 showing first symptoms of headache+hypertension, his symptoms increased with recurrent posting at high-altitudes till the age of 58, requiring clinical investigations. He developed personality changes, forgetfulness showing withdrawal from daily tasks. MRI revealed moderate dilation of the ventricular system suggesting Normal-Pressure-Hydrocephalus, showing bilateral-lateral ventricles out of proportion to the sulcal prominence, suggesting subcortical dementia, MMSE score 23/30 moderate CI, simultaneously assessed by new diagnostic tool UMACE (standardization process completed administrating three adult- samples: non-clinical- (n=78);with/without psychiatric-disorders (n=70),with/without neurological-disorders (n=207). Psychometric properties for 12-item-UMACE and 11-item-MMSE, in the largest sample (including 20% illiterate) cut-off 28.5 of possible 40, had AUC 92.5%, sensitivity 89.7% , specificity 77.0%, demonstrating UMACE utility in detection of CI in all samples)). UMACE could assess specific CI in spatial mapping and episodic memory with suggestive involvement of parahippocampal division supporting neuro-imaging investigations of Normal-Pressure-Hydrocephalus showing bilateral-lateral ventricles out of proportion to the sulcal prominence suggestive of subcortical dementia. Lack of mental-health-awareness and facilities pertain to detect CI within Indian-army-population deployed frequently in Himalayan-high-altitude ranges, with few dementia-cases known till date. Considering army-regime, regular screening for memory and cognitive impairment and cognitive rehabilitation is necessary as applicable to global diversity.

### Biography

Mangal Kardile (MPsychClin, MPhil & IDMHL&HR), earned certificate in "Medical Neuroscience" Duke University on Coursera, March'16". She has been in the research work particularly in memory and cognitive impairment since 2011, presented research papers in international conferences in many countries. She has been awarded funding from Australian NGO "Capacity Australia" for developing a diagnostic tool UMACE (Universal Memory And Cognitive Exam) which is suitable to all population except people having IQ below 70 and Visually impaired. She is a founder & proprietor of "Mental Health Aims" Nasik, India and a member of IPA, ARDSI and Editorial Board Member of *IJHSR*.

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### Notes:



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## Stroke Versus TBI: Utilization of DTI

Ranga C Krishna, Eric Hirsch, Tahir Sarfraz Sheikh, Sanwal Mushtaq and Daryl Duran  
TotalNeuroCare P.C., USA

**Objective:** Stroke versus Traumatic Brain Injury, Utility of Diffusion Tensor Imaging (DTI) in diagnosing etiology of Anosmia.

**Background:** Anosmia is a common sequela of Stroke & traumatic brain injury (TBI) and presents a unique diagnostic challenge. Currently, anosmia is diagnosed through smell tests in conjunction with a history and physical exam. Because this protocol relies almost exclusively on patient responses and lacks an objective measure of impairment, it may be difficult to establish anosmia for purposes of compensation. Although many physicians believe that DTI of the olfactory regions cannot be successfully performed because of their proximity to air-filled sinuses, Skorpil et al. (2011) has demonstrated DTI fiber tracking of the olfactory tracts and several studies have explored DTI of the olfactory regions as a diagnostic tool in the early stages Parkinson's disease. To our knowledge there has never been a study of the potential of DTI to confirm post-traumatic anosmia.

**Methods:** The patient K.P. is a 44-year-old female with pre existing history of metabolic syndrome with pre-existing history of headache and dizziness who was coincidentally punched on the right side of the face, causing her to lose consciousness. After the incident, she reported persistent headaches, dizziness, and anosmia. The anosmia had persisted for three years when she underwent DTI of the frontal lobe and olfactory bulb.

**Results and Conclusions:** DTI revealed encephalomalacia of the anterior frontal lobe and the adjacent olfactory bulbs consistent with post-traumatic anosmia. This case demonstrates for the first time that DTI can supplement existing protocols for the diagnosis of post-traumatic anosmia.

### Biography

Ranga C Krishna is a board certified neurologist with the American Board of Psychiatry and Neurology. He's the director of stroke and neurology at the NY Presbyterian community hospital and has been in clinical practice for the last 26 years with a special interest in Stroke, Epilepsy, Traumatic Brain Injury, and Neuromuscular Diseases.

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## Accepted Abstracts



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## Recuperation of chronic cerebral hypoperfusion induced behavioral, biochemical and structural impairments by cysteinyl leukotriene-1 receptors modulator, originally approved as an anti-asthmatic

Bhupesh Sharma and Prabhat Singh

Amity University, India

**Objectives:** Chronic cerebral hypoperfusion (CCH) is a general pathophysiological condition occurring in vascular dementia (VaD) associated with negative impact on cognitive functions. Cysteinyl leukotriene-1 receptors (CysLT<sub>1</sub>R) are extensively present in the central nervous system, where they participate in regulation of cognition, motivation, inflammation and neurodegeneration. The purpose of this study is to examine the role of montelukast; a specific CysLT<sub>1</sub> antagonist in CCH induced VaD in mice.

**Methods:** Two vessel occlusion (2VO) or permanent ligation of bilateral common carotid arteries technique was used to induce CCH in mice. Animals were assessed for learning and memory (Morris water maze), cholinergic function (increased acetylcholinesterase activity), brain inflammation, brain oxidative stress (brain superoxide dismutase, glutathione, catalase and thiobarbituric acid reactive substance level) and brain damage (brain infarct size using 2, 3, 5-triphenylterazolium chloride staining).

**Results:** Animals with bilateral carotid arteries occlusion have revealed impaired learning and memory, cholinergic dysfunction (increased acetylcholinesterase activity), brain inflammation, brain oxidative stress (reduction in brain superoxide dismutase, glutathione and catalase with an increase in thiobarbituric acid reactive substance level), with increased brain infarct size (2,3,5-triphenylterazolium chloride staining). The administration of montelukast considerably attenuated CCH induced cognitive impairments, cholinergic dysfunction, brain inflammation, brain oxidative stress as well as brain damage.

**Conclusions:** The results of this study suggest that CCH has induced VaD in animals, which was attenuated by the treatment with montelukast, a specific modulator of CysLT<sub>1</sub> receptors. This is the first study which reports the utility of montelukast in experimental VaD. Future research should be targeted towards identification of various possible mechanisms of CysLT<sub>1</sub> receptor modulators in VaD and associated conditions.

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## The “Tickle Trunk” of dementia care

Craig Smith

Champlain Community Care Access Centre, Canada

The Tickle Trunk is the basis of a fun and interactive exploration into the joys and successes of truly person centered care. In this education session, I target all workers from the front-line to upper management to empower them to give the best care possible. I challenge management to set up the system for ultimate success, building policies, procedures and environments that engender a spirit of positive energy and collaborative team spirit that best meet the needs of their clients or residents. This session is built for long term care but has been adapted to meet the needs of community based agencies and organizations as well. The Tickle Trunk, which gets its name from my days as a child watching Mr. Dressup on TV, is more than a physical box of non pharmacological interventions for dementia care but is really a philosophy of care that puts the person with dementia at the centre of the circle of care.

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## Managing behavioral disturbance with the dementia client through person-centered care model

**Claire Henry**

St Patrick's Manor, USA

**Background:** Person-centered care models regarding dementia care has demonstrated positive outcomes for behavioral disturbance, however, leadership, guidance and training on bringing this model into practice is lacking in our health care delivery system. The intent is to increase awareness and understanding about person-centered care for people with dementia and to discuss the complex needs of people with dementia, leading to compromised behavioral symptoms. Discussion includes sleep-wake-cycle disturbance, verbal outbursts and aggression. Further discussion encompasses evidence based outcomes with the use of Person-Centered Care that focuses on preserving the "personhood" of the individual.

**Objectives:** 1. The learner will understand the role of Person Center Care for the dementia client. 2. The learner will identify the difference between Person Centered Care and Task Centered and the significance of moving towards a Person Centered Approach to dementia care. 3. Learners will develop necessary tools to manage challenging behaviors and how Person Centered Care model can directly impact escalation of behavior symptoms. 4. Learners will recognize that all behavior is a form of communication. The learner will develop necessary skills on communication techniques with the dementia client.

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## Utilizing hands-on sensitivity training for first responders, community members and school aged children effectively enhances skill level, skill set, empathy and confidence when interacting with a person with dementia

**Catherine Braxton**

Silver Dawn Senior Friendly Communities

In an effort to continue with a progressive approach to the booming senior population within the United States, we must focus on creating senior friendly communities, both big and small, in an effort to address the growing needs for this vulnerable population. Senior friendly requires more than just a focus on infrastructure, but rather an in-depth effort to enhance empathy, communication skills and provide purposeful engagement for the elders in our lives. This can be accomplished by addressing the social aspects of aging, the fundamentals of the physical changes that occur as we age as well as a focus on empathy enhancement through the use of sensitivity training, education on dementia and open discussions on shared experiences. In the research conducted in the City of Blue Island, Illinois, first responders were given a self-reporting pre-test followed by sensitivity training, dementia education and empathy enhancement training. A self-reporting post-test was given after the training modules. The pre and post questionnaire explored the first responder's amount of training received on senior issues, confidence level with interacting with a senior and ability to relate to and understand the fundamentals of dementia. Within 6 months of training provided to police, fire, medics and the building department within the city of Blue Island, it was determined that: First responders receive no training on senior issues prior to active duty. It was also determined that the Sensitivity Training yielded an increase in understanding of physical and emotional aging issues by 23%. Dementia education provided yielded a 31% increase in self-reported understanding and awareness of dementia related issues. Finally empathy enhancement through the discussion of shared experiences yielded an 18% increase in confidence level and acceptance level of a senior's daily struggles and experiences. The improvements seen in the self-reported post tests indicate that a social model of training, education and hands on sensitivity experiences will result in higher levels of positive interaction among first responders and the seniors that they serve as well as a potential decrease in the negative interactions and escalations of situations involving seniors and those with dementia. The Silver Dawn training modules utilized within community settings can prepare the United States to become more senior friendly, empathic and empowered to successfully engage our growing senior population.

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## Social aspects of vascular dementia

**Himanshu Rath**

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In India, number of people with Alzheimer's Disease and other forms of dementia has crossed 4.5 million mark, which constitutes approx. 4% of total elderly population (115 million+). Unfortunately this section of our elderly population is most vulnerable and marginalized section of society. Every older person experiencing the problem and behavior is considered a burden. The disease is considered as terminal by most of the people associated to the patient i.e. family members, relatives, even caregivers. Wherein; in today's world most cases at an early stage are curable and patients can recover from this disease completely and lead a normal life again. The stigma associated with dementia has arisen due to lack of awareness in the society. People in India have very little understanding of dementia and it is often treated as an old age related disease with which family members and relatives of the elderly with dementia have to compromise and suffer as long as the elderly with dementia live. In our society, people generally marginalize or isolate the affected person with increasing loss of their memory power, emotions & feelings. The lack of awareness and understanding and effects is compounded by limited training facilities for the caregivers and total absence of any support mechanism. Individuals with proper set of resources (counseling, information, experience, knowledge and success stories) can cope with the feelings of loss, frustration, and confusion of dementia more successfully. Support groups and professionals must provide families with information, emotional and practical support and advocacy support.

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## The DAWN Method—How applying theories from Plato, Maslow, Langer, and Kahneman gives wings to habilitative care

**Judy A Cornish**

Dementia &amp; Alzheimer's Wellbeing Network, USA

The greatest stress in dementia care is the seemingly inexplicable behaviors caregivers must respond to. Caregiver stress and uncontrolled behaviors precipitate the need for long-term care, which greatly increases costs. This presentation demonstrates how meeting the emotional needs caused by progressive cognitive impairment can reduce both behaviors and stress. Cornish describes the approach she developed from a five-year informal case study using inductive reasoning to analyse and predict dementia-related behaviors in a group of 32 people with dementia living in Moscow, Idaho. Her purpose was to identify emotional and behavioural patterns to create a method for family dementia care. Cornish details why she believes the problem is emotional distress and behaviors mere symptoms. She argues that Maslow's need hierarchy theory applies to people with dementia, based upon her clients' positive response to mood management and experiential learning of security in confusion and care. She provides examples of self-actualization needs being met with social success, having a sense of control and value, and attachment to a security symbol. Cornish explains her clients' success with experiential learning despite dementia using Plato's intuitive versus rational thought processes and applies Kahneman's theory of our experiencing and remembering selves. She demonstrates how Langer's mindfulness theory supports the value of mindlessness as a tool for the demented brain. Cornish concludes by contrasting the value of studying patterns in symptoms, disease, and physiology when developing medical treatments and cures with the value of analysing emotional and behavioural patterns when designing care for conditions such as dementia.

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## The aid of ephedrine HCL, curcumin and turmerone in neurogenesis and inhibition of beta-amyloid plaques in transgenic mice models

**Keerthi Paramasivam**  
King's College London, UK

This study was done to demonstrate the effects of Ephedrine HCL, Turmerone & Curcumin in Neurogenesis and Inhibition of Beta Amyloids in Transgenic Mice. The transgenic mice models used contain mutations associated with familial Alzheimer's disease (APP Swedish, MAPT P301L and PSEN1 M146V). These mice develop age-related, progressive neuropathology including plaques and tangles. Ten-month-old male and female APPSw Tg+ and Tg- mice from 12 litters were randomly split between treatment groups. Tg+ mice were fed either chow containing a low dose of curcumin (160 ppm; n=9; a high dose of curcumin (5000 ppm; n=6), or no drug (n=8) for 6 months. Mice with low and high dose of curcumin were given specific doses of 0.02% Ephedrine HCL injection every 72 hours and underwent a single intracerebroventricular injection of 3 mg ar-turmerone. To evaluate whether curcumin treatment affected plaque pathology, cryostat hemibrain sections from Tg+ control and Tg+ low-dose curcumin-treated mice were immunostained with an antibody against A $\beta$ 1-13(DAE). Two-factor ANOVA revealed a significant reduction in plaque burden in curcumin, Ephedrine HCL and turmerone treated animals (F(1,60)=4.74; p=0.03), in which amyloid burden was decreased by 43.6% in treated animals compared with untreated animals. Soluble A $\beta$  in Tg+ untreated and Tg+ low-dose curcumin mice were measured by sandwich ELISA. Two-way ANOVA showed significant treatment effects in decreasing the levels of soluble A $\beta$  (\*p<0.05). Underlying mechanistic pathways that might link curcumin treatment to increased cognition and neurogenesis via exon array analysis of cortical and hippocampal mRNA transcription showed a positive result.

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## Occupational therapy interventions for people with dementia: Maintenance of function and autonomy

**Luna Begines Fernandez**  
University of Malaga, Spain

There are a huge number of ways to intervene and act in dementia care but occupational therapy focuses its goals with three highlighted domains: The maintenance of function and autonomy, including cognitive functions, the management of behaviors that affect to the person and his family/caregivers and the reduction of limitations related to the activities of daily living (ADL). Each of these three areas tries to achieve a better quality of life and well-being of the person with dementia which may in turn impact the well-being of those providing care. We look at the evidence for the effectiveness of interventions designed to enhance and increase functioning, intervention is important both for the person with dementia and caregivers. Not only cognitive symptoms are important, the link between cognitive symptoms and the maintenance of day to day function is also a key, it should be the eventual goal. The potential of non-pharmacological interventions in dementia care would include the day to day interaction of caregivers with the person with dementia, the physical and social environment and all type of informal therapies. As occupational therapists we can provide different kinds of interventions depending on the needs and features of the person affected and their family/caregivers, the intervention is going to be always focused on the person and their environment. The aim of promoting independence can be achieved by developing different strategies or interventions related to communication, activities of daily living, activity planning, assistive technology, adaptative aids, environmental modifications, etc.

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## Art therapy: Creative processing grief within dementia

Leara Glinzak

Art Therapy Program - Clark Retirement Community, USA

Grief is often paired with the response of losing a loved one; in this presentation grief is identified as experience of a general loss. Grief responses vary across all individuals and for someone with Dementia, grief can be a challenging process to work through due to memory loss, impaired judgment, language and various cognitive functioning (Alzheimer's Foundation of America, 2015). Comorbid diagnoses with Dementia are additional factors that can attribute to difficulty when working through grief. For example, someone with Parkinson's disease tend to present with increased depressive symptoms where someone may have increased feelings of hopelessness. Art therapy has been effective assessing cognitive status; an avenue to express non-verbal communication, a vehicle for reminiscing and provide something tangible that can be explored and self-reflected (Kahn-Denis, 1997). It is apparent then that art therapy along with narrative techniques can be a complementary treatment to grief (Beaumont, 2013) as a way that offers introspection and self-exploration that result in personal transformation. This presentation will share three case studies and how three different art therapy directives benefited someone with Dementia working through their own grief process to find healing. These three studies share different forms of grief including loss of identity as this person experiences memory loss and impaired physical ability, another on a series of art pieces reflecting her life journey of numerous losses and another on how one person with memory loss was able to reach healing after un-expectantly losing a close friend. These case studies demonstrate how art therapy can help someone with Dementia experiencing grief reach a state of balance, peace and healing.

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## Namaste Care as a hospital service: A pilot study

Kimberley St John

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**Background:** Despite a quarter of acute hospital beds being occupied by people with dementia, many hospitals lack appropriate services to meet the holistic needs of people with dementia. Namaste Care is a sensory program that has been developed to meet the spiritual needs of people in the more advanced stages of dementia. It has been implemented successfully in care homes but it is not known whether it is an appropriate service for the acute hospital setting.

**Aim:** To explore whether Namaste Care is an acceptable and effective service for people with advanced dementia being cared for on an acute ward in a busy inner-city teaching hospital.

**Methods:** This was an exploratory qualitative interview study. Individual, semi-structured, face-to-face interviews were conducted with hospital healthcare staff working in the area of the hospital where Namaste Care had been implemented. Data were analyzed using the framework approach.

**Results:** Eight interviews were completed with members of the multidisciplinary ward team. Two main themes emerged with associated subthemes: Difficulties establishing relationships with people with dementia in hospital (sub-themes: Lack of time and resources, lack of confidence leading to fear and anxiety); The benefits of a Namaste Care service in an acute hospital setting (sub-themes: A reduction in agitated behavior; connecting and communicating with patients with dementia using the senses; a way of showing people with dementia they are cared for and valued).

**Conclusion:** This small scale study indicates that Namaste Care has the potential to improve the quality of life of people with advanced dementia being cared for in an acute hospital setting. However, further research is required to explore more specifically its benefits in terms of improved symptom management and wellbeing of people with dementia on acute hospital wards.

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## Dealing with dementia as a terminal illness

**Molly Carlile A M**

Australian College of Nursing, Australia

Western cultures are notoriously death denying and this applies equally to people in later life who are often living with multiple chronic illnesses, dementia being one. Dementia, though known to be a terminal illness is rarely discussed as such and the grief a person and their family experience on receipt of a diagnosis of dementia is often under explored by health professionals. Health professionals often feel ill-equipped to undertake “difficult conversations” with patients and their families and so their grief goes unaddressed and end of life issues remain unexplored until the person enters the active dying or imminent death phase, at which time both the person and their family are ill-prepared for the palliative nature of the care that is now appropriate. In order to provide the best level of care and quality of life for people living with dementia it is essential for Health Professionals to assist them to explore their values, their fears and apprehensions and to understand what a “good death” and high level of “quality of life” looks like for each individual diagnosed with dementia. This presentation will explore the importance of Advance Care Planning, holistic care and exemplary end of life care (including exploring the issues of grief and loss) for people and their families living with dementia and the ‘road blocks’ that currently exist that prevent these conversations from happening early in the illness trajectory.

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## Dementia: A new health concern for developing countries, especially Bangladesh

**Nahian Fyrose Fahim<sup>1,2</sup>**<sup>1</sup>Daffodil International University, Bangladesh<sup>2</sup>Sir William Beveridge Foundation, Bangladesh

Dementia is a condition with wide range of symptoms associated with a decline in memory and reduces a person's ability to perform everyday activities and gradually leads to death. The victims are mostly people aged 60 and above. Few years back dementia was quite unknown term for the developing country like Bangladesh where people are used to suffer with some other non-communicable disease like diabetes, hypertension, cancer, and so on. Bangladesh is currently undergoing a demographic transition and the ratio of the population 60 years and older is gradually increasing. Currently, older people account for around 7% of the country's total population, amounting to roughly 10 million people. By 2050, the 60+ population will account for 20% of the total population, a four-fold increase from the present time. It is estimated that there are about 4,60,000 people with dementia in Bangladesh in 2015 while the number will rise to 8,34,000 in 2030 and 21,93,000 by 2050 respectively. It is obvious that this problem will be a national burden very soon if proper steps are not taken. Till now as there is no formal diagnosis and treatment process for dementia in the country these people and their family has to lead a measurable life till death. In this case building awareness and providing proper care for the people with dementia can be an effective option in Bangladesh. For this, Sir William Beveridge Foundation Bangladesh, having a motto of working for a better society; paid their attention to fight against dementia throughout the country.

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## Uganda's comprehensive strategy for dementia care to the ageing population

**Richard Semanda**

Geriatric Respite Care Foundation, Uganda

In the year 2012 Uganda marked 50 years of independence, with improved health services and progressive improvements in life expectancy where older persons' numbers have increased across the country hence ageing population but with no knowledge on a group of symptoms which can occur as a result of diseases that damage their brains. Information on dementia and care in Uganda is sparse due to few studies carried out. Dementia is regarded as a western condition which has frequently discarded the development of public health strategies in the Uganda's health system. 2014, Global Network of Age-Friendly Cities and Communities (GNAFCC) Department of Ageing and Life Course (ALC) World Health Organization (Geneva) commissioned a set of small-scale qualitative investigation of older Adult's experiences on health and old age in three Sub-Saharan Africa (SSA) cities that is; Kampala by Geriatric Respite Care Foundation Uganda (GRCF-U), Bamenda (Cameroon) and Conakry (Guinea). Results showed that apart from age, the factors that may be responsible for the development of dementia are likely to be nutritional, environmental, stress, family inheritance, diseases like HIV and AIDS among others. Dementia being a worldwide impact which Uganda felt today, Geriatric Community, Palliative and Dementia Care Services and with our extensive experience in the field of ageing GRCF-U is in negotiations with Butabika National Mental Referral and Teaching Hospital Kampala for a comprehensive strategy for resources to ignite the spirit in the people with dementia, their families and cares as well as organizing clinical therapies with admiral nurses and other experts.

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## Trauma, loss and post traumatic growth: A caregiver's perspective

**Rosemary Rawlins**

Advisory Board Member for the TBI Model System of Care at Virginia Commonwealth University, USA

Through the lens of her experience as caregiver for her husband with a severe TBI, Rosemary will share insights into how trauma affects caregivers along with the challenges, stressors, and fears they face. After 24 years of marriage, Rosemary's husband had a new personality—a byproduct of his TBI that left Rosemary struggling with ambiguous loss. Rosemary shares how she and Hugh moved forward in their relationship and life. She will define resilience and share proven strategies to increase resilience while presenting specific approaches like environment enrichment that helped her husband achieve a good outcome. Rosemary will wrap up her talk by discussing Post Traumatic Growth – the only upside of trauma—and her secret for managing fear.

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## The disease of addiction as a potential cause vascular changes and dementia

**Samir Kasper**

University of Sarajevo, Bosnia and Herzegovina

This paper presents a retrospective analysis of addicts treated at the Institute for addiction Zenica Doboj Canton Zenica. Goal of the study was to determine whether the consumption of psychoactive substances has an effect on neuro-cognitive abilities with potential influence on the development of vascular changes in the CNS and consequently the development of dementia. The study included all patients who were hospitalized at the hospital's this medical institution. Criteria for inclusion in the study were clinical and laboratory confirmed dependence on psychoactive substances and the absence of other psychopathologies disorders that could affect neurocognitive abilities. Criteria for exclusion from the study were the presence of mental illness within which occurs neurocognitive impairment. We used available data from medical records and electronic databases for patients who met the criteria for inclusion in study. In study used standard psycho-diagnostical instruments, Luria-Nebraska Test neurocognitive abilities, available neurophysiological (EEG) and neuro-radiologies tests (CT, MRI). Statistical analysis was carried out in a computer program SSPS. Although efforts have been carried out statistical sample was neither age nor sex balance. Results obtained by analyzing the data were inconsistent and mostly it was a transient impairment of neurocognitive abilities. We could not confirm the basic hypothesis that consumption of psychoactive substances leads to vascular changes in the blood courts and brain tissue and consequently can lead to dementia. For confirm or refute this hypothesis will need to be more thorough and better designed studies using functional neuroimaging methods.

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## Apathy in neurocognitive disorders: An overlooked conundrum

**Shailendra Mohan Tripathi**

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The apathy is defined as a syndrome of primary motivational loss, that is, loss of motivation not attributable to emotional distress, intellectual impairment or diminished level of consciousness. Although apathy is one of the commonest presentations of neurocognitive disorders (NCD), researchers have relatively overlooked it. Apathy is not just emotional aspect of a disease process but the neurobiological exploration has revealed that it is linked with the structural and functional changes in the brain parenchyma. Neurocognitive disorders are not immune to it. Apathy is frequently associated with the neurocognitive disorders and ultimately hampers the prompt diagnosis and prognosis. It is a part of the behavioral and psychological symptom associated with the cognitive impairment. It represents a form of executive cognitive dysfunction and is one of the primary syndromes associated with frontal and subcortical pathology. Apathy in NCD appears to have multiple neuro-anatomical correlates that implicate components of frontal sub-cortical networks. Patients with apathy suffer from decreased daily function and specific cognitive deficits and become more reliant on care, which results in increased stress for families/caregivers. Many times it is difficult to distinguish depression from apathy, which is also commonly associated with the cognitive impairment due to shared phenomenology. Insight into these aspects will help the clinicians better manage the patients. This presentation will explore the various dimensions of apathy starting from its neurobiology to its clinical presentation and effective management. This will help the clinicians develop a deeper understanding of apathy associated with the neurocognitive disorders and ultimately help improve overall functioning of patients and alleviate the care giver burden.

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## Role of glia in inflammation and Alzheimer's disease

Soraya L Valles, Adrian Jorda, Martin Aldasoro, Antonio Iradi, M Dolores Mauricio and Jose M Vila  
University of Valencia, Spain

During decades, glia cells have been considered such as protective and nutrient cells taking care neurons in the brain. In this decade, many scientists have published different roles for astrocytes, oligodendroglia, microglia and endothelial cells. The main aim of this study was to show the role of glia in Alzheimer's disease using transgenic APP/Presenilin 1 and comparing with Wild type mice. We detect increase in inflammatory genes in wild type mice compared with transgenic one, demonstrating a chronic inflammation in those mice. Also we noted increase in *CCL3* and *CCL4* genes involved in brain demyelination compared with wild type mice, which can explain the cleaning job of astrocytes in transgenic mice trying to eliminate A $\beta$ 1-42 plates. By microarray *CCR8*, *CX3CL1* and *CXCR3* genes were significantly high expressed in wild type compared with transgenic mice, showing us the proper positioning of activated T cells with adhesive, trafficking and migratory functions in wild type. In fact we detect also a significant increase of IL-3 in transgenic mice compared to wild type indicating activation of T cells and induction of proliferation and differentiation of T cells in transgenic mice compared with wild type. In our study, integrin activation, cytoskeletal changes and chemotactic migration was also altered in transgenic mice compared to wild type. For instants, astrocytes play important roles such as protector of neurons in front of inflammation imbalance and regenerating damage intake. Further we detect presence of tumour resistant gene in transgenic mice, *ABCF1*, without any expression of this gene in wild type and on the contrary expression of *CCL12*, cancer gene, in wild type without any expression in transgenic mice. These last data indicate a resistance of transgenic mice to cancer compared to wild type mice. In the future the study of the communication between all brain cells will be necessary to understand much neurodegenerative illness and the protection of stem natural cells of our young brain will be the next frontier.

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## Association of genetic polymorphisms of claudin-1 with small vessel vascular dementia

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**Introduction & Aim:** The most recent hypothesis that explains the development of small vessel disease vascular dementia (VaD) emphasises the role of blood-brain barrier (BBB) dysfunction. However, while environmental risk factors like hypertension and Type 2 diabetes mellitus are known to contribute to BBB dysfunction, the molecular mechanism of this process is unclear. It is hypothesised that certain genetic polymorphisms of the BBB tight junction claudin-1 protein, in combination with adverse environmental risk factors, increase the risk of BBB dysfunction and small vessel disease.

**Methods:** In this case-control study, 47 control participants, with a Mini Mental State Exam (MMSE) score of above 27, and 36 VaD participants were recruited and completed a questionnaire on their medical history and lifestyle factors. Blood was also collected and three single nucleotide polymorphisms (SNPs), rs17501010, rs9290927 and rs893051 of claudin-1 genotyping were analysed by real-time polymerase chain reaction (PCR) assay.

**Results:** A significant higher prevalence was found in the VaD group compared to controls in the GT genotype of SNP rs17501010 ( $p=0.011$ ) and the AT genotype of SNP rs9290927 ( $p=0.012$ ). Stratified analysis also showed that individuals with both the variant genotype of any of the 3 SNPs (rs17501010, rs9290927 and rs893051) of claudin-1 and Type 2 diabetes mellitus, have a significantly higher risk of developing small vessel VaD.

**Conclusion:** The claudin-1 polymorphisms rs17501010 and rs9290927 are significantly associated with VaD. Moreover, gene-environment interaction between claudin-1 polymorphisms and Type 2 diabetes mellitus plays a synergistic role on the development of small vessel VaD.

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## Dementia: Nanoapproaches to treatment

**Upendra Nagaich**

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Mild dementia or mild cognitive impairment (MCI) causes slight but measurable cognitive changes like decline in memory and thinking skills which can easily be noticed by the individuals experiencing them or to other people. There is no certainty that MCI get worse or patient may feel eventually better. It is classified on the basis of thinking skills affected like amnesic MCI (memory affected) and non-amnesic MCI (thinking skills affected along with memory). High blood pressure, high cholesterol, type 1 diabetes and smoking are the factors which promotes the risk of dementia. Management of these factors may reduce its risk. A number of medications have been shown to be effective in treating mild, moderate and severe dementia. Donepezil, memantine hydrochloride, antipsychotics and acetylcholine-esterase inhibitors (such as galantamine and rivastigmine) are used to treat dementia. Furthermore, numerous new strategies are emerging for the management of dementia like nanotechnology i.e., development of nano-particles. Nano-particles are formulations of synthetic, chemical components that self-assemble on mixing into particles of less than 100 nm. Nanostructure mediated drug delivery enhances drug bioavailability, improves the timed release of drug molecules, and enables precision drug targeting. The nano-particle components that will be designed and synthesized will comprise novel peptides and lipids with smart properties, such as receptor targeting, stealth coatings, bio-responsive linkers for disassembly, and biocompatibility. A plethora of research findings are available for the treatment of dementia. This new nanotechnologies could transform the management of patients with dementias with enormous potential benefits to the world and the economy.

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## Utilizing IMPROVe™ dementia communication technique developed by silver dawn senior friendly communities enhances confidence, awareness and skill sets for those interacting with a person with dementia

**Tami Neumann**

Silver Dawn Senior Friendly Cities

Within the past 20 years of dementia care, multiple communication techniques have been attempted at effectively redirecting and communicating with those with dementia including: Reality orientation, therapeutic fibs and fantasy validation. The problematic issues that arise from these past techniques include an increase in agitation among the person with dementia (PWD), increasing difficulty with redirection by staff as well as a lack of understanding of “how to effectively communicate” by family members. The vagueness of these techniques do not allow for a family member to feel confident in their abilities to communicate and therefore lead to a decrease in meaningful moments of connection with the PWD. The IMPROVe™ communication technique developed by Silver Dawn founders Tami Neumann and Catherine Braxton successfully provide a simplistic format for communication that can be easily trained to direct care staff, family members, first responders and business owners within a community. The patented technique utilizes the concepts of “improv” to provide rules of engagement that encourage positive interaction and an increase in meaningful moment creation. A Pre-test and post-test method was utilized when providing the IMPROVe©™ communication training to police, fire, medics, building department personal, local business owners and children within the school settings during a 6 month pilot program developed in Blue Island, Illinois. The findings indicate that the IMPROVe™ training increased the population’s confidence level in effectively communicating with a senior and PWD by 41%. Posttests after IMPROVe™ training also indicated an increase of 51% in active listening skills by the participant. These figures indicate that a social model of education and training with IMPROVe™ can enhance the engagements with PWD dramatically and should be utilized among all forms of communities to encourage meaningful moment creation for families, children and the community at large.

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