ITNs are widely promoted as means of preventing man- vector contact in the control of malaria. Development of Long Lasting Insecticidal Nets (LLINs) avoids the need for re-treatment which was a major operational problem faced by net owners. There are, however several factors which affect the efficacy of ITNs. Washing is one among the factors affecting the efficacy of ITNs by reducing the lethal concentration of insecticides on the net surface. The objective of this study was to evaluate wash resistance of LLIN, currently available in Ethiopia, in two different washing procedures and compare with conventionally treated nets (CTNs) subject to repeated washes. Two types of LLINs: (1) Olyset® (2) PermaNet® and net treated conventionally with deltamethrin were exposed to two different washing procedures (washed on stone and basin). Then all nets were subject to mosquito bio- assay on WHO cone test. Mosquitoes were exposed to each net for three minutes. Knockdown rate was measured 60 minutes after exposure and mortality rate was measured 24 hr after exposure. Effect of sunlight on the efficacy of nets was also assessed. LLINs performed well than CTNs in both washing procedures. PermaNet®, relatively, was the most wash resistant with 80% mosquito mortality in WHO cone bioassays after as many as 20 washes in nets washed on basin and 65% in nets washed on stone. Olyset® was also as wash resistant as PermaNet® with >75% mortality after 20 washes in nets washed on basin but when washed on stone, Olyset® performed less than PermaNet® with mosquito mortality 50% after 20 washes, P= 0.032. CTNs were the least wash resistant in both cases with 60% mosquito mortality in nets washed on basin and 33.3% in nets washed on stone just after 5 washes. Wash resistance of a net had significant difference when washed on stone and basin, P=0.031 by ANOVA. Nets dried in direct sunlight or in shade had no significant difference in mosquito mortality or knockdown rate, P= 0.602. In general, washing ITNs harshly rubbing on stone reduces effective life span of insecticides on nets so rapidly as compared to nets washed on basin. So washing nets gently should be recommended to keep LLINs effective throughout their physical life span.