Proper maintenance of telomere length is important for cellular physiology and could be for organismal aging as well. It has been shown that telomere length of peripheral white blood leukocytes (PBLs) is highly corelated with age of individual. It has been proposed that measurement of telomere length can be used as a predictive biomarker for age and age-related diseases. In fact, the service to measure telomere length in individual is commercially available now. Intervention for maintenance of telomere length during aging such as decrease in telomere loss and transient activation of telomerase might be useful for increase in healthspan in individual. The author introduces potential for telomerase therapy to cure age-related diseases in this manuscript. This review article is potentially interesting and might be useful for the researchers in the field of aging. However, there is a couple of concerns shown below for the manuscript.

1. There are four figures in this manuscript. Relation between figures and text is unclear.

2. On page 2, third paragraph, all theories of aging are not related to cellular senescence. This paragraph should be rephrased.

3. For Figure 1, environmental stresses such DNA damage and oxidative stress might affect telomere length but these stresses could induce cellular senescence directly in many cases. This figure gives the readers impression that all the stresses induce cellular senescence through telomere shortening. Please modify that point.

4. On page 9, first paragraph, the author mentioned that there is no data on the relatedness between the telomere length maintenance (TLM) and cancer. Cancer cells maintain proper length of telomeres by expressing telomerase or activating ALT. It is obvious that telomere length maintenance is important for survival of cancer cells. This paragraph is misleading.

5. On page 10, third paragraph, telomerase expression does not show any cancerous phenotype in many primary cultured cell lines even in some mouse models. However, the effect by telomerase expression might be different in genetic background or environment of individual. For example, cancer incidence increases by telomerase overexpression in some tumor suppressor null background in mouse. The author should mention this part more carefully.

6. For Figure 4, it is better to explain more detail for Telomerase Therapy for Alzheimer’s disease in the text because this part is main theme for this manuscript.

7. Dr. Michael Fossel is listed in Author’s contributions but is not in author list. Is Dr. Fossel co-author?

8. Reference #58 is missing.