**Vitamin D**
Positively associated with telomere length due to its anti-inflammatory role.23

**Manganese**
Required cofactor in Mn superoxide dismutase, a deficiency in which decreases telomerase activity.24

**Vitamin E**
Enhances DNA repair as well as removal of damaged DNA; Shown in vitro to restore telomere length on human cells.21,22

**Vitamin D**
Positively associated with telomere length due to its anti-inflammatory role.23

**Folate**
Influences telomere length via DNA methylation.1,2,3

**B3**
Extends lifespan of human cells in vitro; Slows telomere attrition rate by reducing reactive oxygen species in mitochondria.4,5

**B2, B6 and B12**
Crucial for proper DNA methylation.6,7

**Cysteine**
Stem cell treatment with N-acetyl cysteine corrects DNA damage in telomeres.8

**Zinc**
Important cofactor for DNA repair enzymes; key role in regulating inflammation.9

**Copper**
Key cofactor in the potent antioxidant superoxide dismutase that is known to protect telomeres.11

**Magnesium**
Induced deficiency shortened telomeres in rat livers; Regulates chromosome separation in cell replication.12

**Selenium**
In vitro supplementation extended telomere length in liver cells; selenoproteins protect DNA.13,14,15,16

**Glutathione**
Interference of glutathione dependent antioxidant defenses accelerates telomere erosion.17,18

**Calcium**
Required cofactor to prevent DNA replication errors.25
REFERENCES

1. Fenech M. Nutriomes and nutrient arrays - the key to personalised nutrition for DNA damage prevention and cancer growth control. Genome Integr 2010;1:11.


For additional references, go to http://www.spectracell.com/online-library-telomere-abstracts/