

**Senate Community Affairs Committee**

**ANSWERS TO ESTIMATES QUESTIONS ON NOTICE**

**HEALTH PORTFOLIO**

**Supplementary Budget Estimates 2014 - 2015, 22 October 2014**

**Ref No: SQ14-001307**

**OUTCOME:** 1 – Population Health

**Topic:** Titanium Dioxide in Food

**Type of Question:** Written Question on Notice

**Senator:** Siewert, Rachel

**Question:**

1. In a previous question (SQ14-000584), you disputed the assertion that children were the population most exposed to TiO<sub>2</sub>. That conclusion was reached in a 2012 study based on the extensive use of TiO<sub>2</sub> in foods commonly eaten by children, such as lollies, donuts, gum and other sweets. Would you agree that children are a more vulnerable population and that risks associated with consumption of nanomaterials are likely to be higher than for adult populations?
2. In that same question you also dispute that there is ‘uncertainty’ regarding the safety of nano TiO<sub>2</sub>. Are you suggesting that there is certainty regarding the safety of nano TiO<sub>2</sub>?
3. In question SQ14-000579, you state that there is “no significant evidence that titanium dioxide poses a significant risk to human health and safety in the form and levels used in foods.”
  - a) What are the levels of nano TiO<sub>2</sub> used in foods?
  - b) Do you know if the effects of nano TiO<sub>2</sub> are or could be cumulative?
  - c) Will the effects of nano TiO<sub>2</sub> be the same in different food products?
  - d) Would you agree that nano TiO<sub>2</sub> is more biologically active than conventionally sized TiO<sub>2</sub>? And that the amount of TiO<sub>2</sub> may not be the issue?

**Answer:**

1. Food Standards Australia New Zealand (FSANZ) is aware of the study by Weir et al. The study found a proportion of the titanium dioxide particles in a food additive sample from one supplier had one dimension of less than 100 nm. The study also found elemental titanium in analysed food samples.

Health-based guidance values which establish safe exposures to chemical substances are protective of both children and adults. FSANZ is not aware of any studies that indicate that titanium dioxide as approved for use in foods is likely to cause adverse effects in children.

2. The term 'safe' in the context of food generally means that there is reasonable certainty of no harm under normal conditions of consumption. It is important to note that 'safe' does not mean zero risk, although in most cases the risk will be low and for most people will be regarded as acceptable.

FSANZ is not aware of any studies that indicate there is a health concern associated with the use of titanium dioxide in processed foods in accordance with Standard 1.3.1. However, FSANZ is further reviewing the scientific literature for certain insoluble materials with existing permissions in the Australia New Zealand Food Standards Code, to determine whether there is any justification to establish specifications based on particle size, based on the best available scientific evidence.

3.
  - a) FSANZ is not aware of any studies that have investigated the particle size distribution of titanium dioxide in the food supply.
  - b) No. There is no evidence that nano- titanium dioxide may have 'cumulative effects'. FSANZ understands cumulative effects in this context to mean cumulative effects of nano-TiO<sub>2</sub> and other substances that may have a similar mechanism of toxicity.
  - c) FSANZ is not aware of studies that may have investigated health effects associated with ingestion of titanium dioxide in different food matrices.
  - d) No. FSANZ is not aware of any information that suggests different particle sizes of titanium dioxide may be 'more biologically active' when used according to its approved uses in food. In this context, FSANZ has understood 'more biologically active' to mean more likely to produce adverse health effects.