## Response to Proposition 65:

Tylenol, or Acetaminophen, is one of the most common over-the-counter drugs to treat pain and fever. It has been found to be low risk in pregnant patients and has become a popular alternative to opioids during the opioid epidemic. Unfortunately, proposition 65 aims to label it as a carcinogen, in a similar fashion as the weed killer Roundup was labeled in 2017. When used appropriately, the benefits outweigh rare or potential risks.

Based on review of the literature and information presented, it is the opinion of California Society of Interventional Pain Physicians that labeling acetaminophen as a carcinogen is misleading the public and we are opposed to Proposition 65. Furthermore, we believe this is an incentive for trial attorneys to increase erroneous claims linking acetaminophen to cancer.

Statistical analysis of the literature does not show a clear causal relationship of acetaminophen with cancer. Studies are negative or mixed (Weiss). Most any drug, if misused or given in high doses, can be deleterious to the body. Individual patient differences also need to be accounted for. Some observational data show an association of kidney cancer associated with high intake of acetaminophen in some patients (Choueiri). However, moderate doses did not show this association. Further work is needed to elucidate biologic mechanisms behind these findings.

Of interest, acetaminophen has shown some benefit in improving chemotherapy treatment in breast cancer. Japanese researchers have found in mice that aggressive, undifferentiated breast cancer stem cells become more differentiated with acetaminophen, which improves chemotherapy activity in killing these cancer cells (Takehara).

In summary, current literature does not support labeling acetaminophen as a carcinogen in humans at regular dosages. In fact, it may have some benefits to improve chemotherapy response in some cancers. Research and good clinical judgement should be our compass in the matter at hand. We therefore oppose California Proposition 65.

**Refs:**

Choueiri TK. Analgesic use and the risk of kidney cancer: a meta-analysis of epidemiologic studies. *Int J Cancer*. (2014 January 15): 134(2): 384–396.

Takehara M, et al. Acetaminophen-induced differentiation of human breast cancer stem cells and inhibition of tumor xenograft growth in mice. *Science Direct. Biochemical Pharmacology* 81
(2011): 1124–1135.

Weiss NS. Use of acetaminophen in relation to the occurrence of cancer:
A review of epidemiologic studies. *Cancer Causes Control* (2016) 27: 1411–1418.

**(California Society of Interventional Pain Physicians: 1/25/20)**