Note: Anti-fluoride activists often cherry-pick sentences from studies and use them in ways that misrepresent the actual findings. In a 2011 article, the Santa Cruz Sentinel (Calif.) newspaper examined the importance of relying on sound science to reach conclusions about this public health issue.

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Fluoridation: How to read about research

By Marissa Fessenden

Not all science research is created equal. Differences in study design, use of statistics to determine significance and kinds of questions asked vary from study to study.

The most trustworthy studies are peer-reviewed, a process that determines if the research is worth publishing.

Scientists send a paper to a journal to be published. The editor at the journal sends the paper to several other scientists who work in the same field, the peers. Those scientists read the paper and point out problems, additional questions and gaps in the research. The original research team might need to do more experiments and resubmit before getting the paper published.

However, mistakes happen and sometimes bad research is published. Even peer-reviewed research can be poor-quality research. Readers need to carefully evaluate each paper.

Science is a process. Results are often reported as if they are fact by media, but scientists understand that each new experiment reveals something new about the world. Only by asking questions do scientists come up with answers. Those answers can change as technology advances.

Many studies against fluoridation or proving negative health effects have reportedly been papers published at low-tier journals or studies withdrawn after being published.