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**Long-term observations of non-alcoholic steatohepatitis aggravated by  
*Streptococcus mutans* infection in mice**

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*Streptococcus mutans*, a major pathogen of dental caries, is known to cause infective endocarditis after invading the bloodstream. In our previous study, administration of *S. mutans* strain TW871 aggravated non-alcoholic steatohepatitis (NASH) in mice fed a high-fat diet (HFD). Furthermore, after an initial 4-week HFD, we identified typical NASH-like findings 12 weeks following administration of that bacterial strain, though periodic observations thereafter were not performed. In the present study, following approval from the Animal Experiment Committee of Osaka University Graduate School of Dentistry, we compared the effects of various HFD feeding periods in mice administered TW871. Six-week-old C57BL/6J mice were given an HFD for 4 weeks, then *S. mutans* TW871 ( $1 \times 10^7$  CFU) or phosphate-buffered saline (PBS) was intravenously administered under general anesthesia. Following euthanasia at 8, 12, 16, or 44 weeks after administration, conventional NASH evaluations were performed and histopathological findings of obtained tissue sections were evaluated using image J software. At 8 weeks after TW871 administration, no typical NASH-like findings were identified, whereas they were observed after 12 weeks, with progression of severity noted after 16 weeks and severe NASH after 44 weeks. In the PBS-administered group, only initial stage NASH-like findings were identified at 44 weeks and no typical findings of NASH were observed after 8, 12 or 16 weeks. These results suggest that administration of only specific *S. mutans* strains aggravated NASH conditions much earlier in NASH-model mice.

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