

AGUA HIDROGENADA Y PERIODONTITIS

El efecto beneficioso del agua hidrogenada sobre la enfermedad periodontal queda patente en varios estudios publicados (el primer estudio es en humanos y los otros 2 experimentales). Todos concluyen que existe una clara relación entre el estrés oxidativo y la periodontitis y beber agua enriquecida con hidrógeno mejora la salud periodontal.

- El motivo es porque el agua hidrogenada tiene efecto antioxidante y antiinflamatorio, además de anti-envejecimiento sobre el daño oxidativo periodontal relacionado con la edad.
- El agua hidrogenada neutraliza los radicales libres de oxígeno que contribuyen al desarrollo de la periodontitis.
- Además, se ha visto que previene la formación de las células que degradan el hueso (osteoclastos) y que se produce con la progresión de la periodontitis.
- Beber agua hidrogenada de manera continuada puede mantener los efectos del tratamiento periodontal en la periodontitis. Es decir, ayuda a mejorar el tratamiento utilizado habitualmente.

1. Antioxidants (Basel). 2015 Jul 9;4(3):513-22.

Drinking Hydrogen-Rich Water Has Additive Effects on Non-Surgical Periodontal Treatment of Improving Periodontitis: A Pilot Study.

Azuma T, Yamane M, Ekuni D, Kawabata Y, Kataoka K, Kasuyama K, Maruyama T, Tomofuji T, Morita M.

Oxidative stress is involved in the pathogenesis of periodontitis. A reduction of oxidative stress by drinking hydrogen-rich water (HW) might be beneficial to periodontal health. In this pilot study, we compared the effects of non-surgical periodontal treatment with or without drinking HW on periodontitis. Thirteen patients (3 women, 10 men) with periodontitis were divided into two groups: The control group (n = 6) or the HW group (n = 7). In the HW group, participants consumed HW 4-5 times/day for eight weeks. At two to four weeks, all participants received non-surgical periodontal treatment. Oral examinations were performed at baseline, two, four and eight weeks, and serum was obtained at these time points to evaluate oxidative stress. At baseline, there were no significant differences in periodontal status between the control and HW groups. The HW group showed greater improvements in probing pocket depth and clinical attachment level than the control group at two, four and eight weeks ($p < 0.05$). The HW group also exhibited an increased serum level of total antioxidant capacity at four weeks, compared to baseline ($p < 0.05$). **Drinking HW enhanced the effects of non-surgical periodontal treatment, thus improving periodontitis.**

2. Sci Rep. 2014 Jul 2;4:5534. doi: 10.1038/srep05534.

Effects of hydrogen-rich water on aging periodontal tissues in rats.

Tomofuji T, Kawabata Y, Kasuyama K, Endo Y, Yoneda T, Yamane M, Azuma T, Ekuni D, Morita M.

Oxidative damage is involved in age-related inflammatory reactions. The anti-oxidative effects of hydrogen-rich water suppress oxidative damage, which may aid in inhibiting age-related inflammatory reactions. We investigated the effects of drinking hydrogen-rich water on aging periodontal tissues in healthy rats. Four-month-old male Fischer 344 rats (n = 12) were divided into two groups: the experimental group (hydrogen-rich water treatment) and the control group (distilled water treatment). The rats consumed hydrogen-rich water or distilled water until 16 months of age. The experimental group exhibited lower periodontal oxidative damage at 16 months of age than the control group. Although protein expression of interleukin-1 β did not differ, gene expression of Nod-like receptor protein 3 inflammasomes was activated in periodontal tissues from the experimental group as compared with the control group. **Drinking hydrogen-rich water is proposed to have anti-aging effects on periodontal oxidative damage**, but not on inflammatory reactions in healthy rats.

3. J Clin Periodontol. 2011 Dec;38(12):1085-90.

Hydrogen-rich water attenuates experimental periodontitis in a rat model.

Kasuyama K, Tomofuji T, Ekuni D, Tamaki N, Azuma T, Irie K, Endo Y, Morita M.

AIM: Reactive oxygen species (ROS) contribute to the development of periodontitis. As molecular hydrogen can act as a scavenger of ROS, we examined the effects of treatment with hydrogen-rich water on a rat model of periodontitis. MATERIAL & METHODS: A ligature was placed around the maxillary molars for 4 weeks to induce periodontitis, and the animals were given drinking water with or without hydrogen-rich water. RESULTS: The rats with periodontitis which were treated with pure water showed a time-dependent increase in serum ROS level. Compared with the rats without periodontitis, the periodontitis-induced rats which were given pure water also showed polymorphonuclear leucocyte infiltration and alveolar bone loss at 4 weeks. Hydrogen-rich water intake inhibited an increase in serum ROS level and lowered expression of 8-hydroxydeoxyguanosine and nitrotyrosine in the periodontal tissue at 4 weeks. Such conditions prevented polymorphonuclear leucocyte infiltration and osteoclast differentiation following periodontitis progression. Furthermore, inflammatory signalling pathways, such as mitogen-activated protein kinases, were less activated in periodontal lesions from hydrogen-rich water-treated rats as compared with pure water-treated rats. CONCLUSION: **Consuming hydrogen-rich water might be beneficial in suppressing periodontitis progression by decreasing gingival oxidative stress.**