

Keywords: bullying, suicidal ideation, mental health, adolescence, family medicine,

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Burial or cremation, what's the best option for the environment?

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BACKGROUND: The impact of funerals on the environment is increasingly cause for concern from the population. More and more attention is paid to ceremonies than to the cremation or burial, there are a number of factors that must be taken into account to reduce the environmental impact, for example, the preparation of the body, how the urn is made, lighting, heating or cooling the place of the wake, not forgetting the transport of relatives and friends who attend the ceremony. There are also theories that confirm that traditional burial is the one that has the greatest environmental impact, this is mainly due to soil area occupied in cemeteries, while the cremation, weighs energy consumption and pollutant emissions. **OBJECTIVE:** The main objective is to see whether the cremation or burial that environmental impacts are greater. **RESULTS:** Through this article it was possible to identify some environmental impacts that are caused by funerals, concluding that seeing the process as a whole, the ceremony is what causes more environmental impact due to the surrounding aspects. It was also identified that it is the burial that causes the most impact compared to cremation, especially in the area of soil occupied by cemeteries, while cremation weighs the energy consumption and emission of pollutants. **CONCLUSIONS:** One of the reasons for this study was to arouse interest in this area that has not yet been explored in Portugal in order to contribute to the discussion about the environmental impacts caused by the funeral processes that are part of the Portuguese daily life, as well as the openness to the discussion of new methods of more sustainable funeral processes that are beginning to be used in other European countries, which may be the new trend of choice in the future.

Keywords: Environment, Public Health, Cremation, Burial

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Influence of solvent type, extraction techniques, particle size, extraction times and temperatures on antioxidant activity of *T. hispanicum*

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BACKGROUND: Plants of the genus *Taraxacum* have been used for years in medicine and food. This genus, with a complex taxonomy, includes some species of difficult distinction, where *T. hispanicum* is included. The leaves of these plants, known as dandelion, continue to be used as infusions, ethanolic extracts, or as juice^[1,2]. Since the plant represents an important source of pharmacologically active molecules, namely antioxidant activity, it is important to develop extractive procedures to maximize its potential health benefits. **OBJECTIVE:** Thus, the main objective of this work is to evaluate the effect of solvents, extraction techniques, particle size, extraction times and temperatures on the antioxidant activity of *T. hispanicum*. **METHODS:** Experimental study with analysis of the following factors, solvent type (distilled water and tap water), particle size (large particles and powder), extractive technique (infusion, maceration and decoction), temperature (60 °C and 100 °C) and extraction time (3, 10 and 20 minutes). The antioxidant activity of *T. hispanicum* was analyzed using different methods, namely DPPH radical assay, superoxide and iron chelation assay. For all assays the IC₅₀ value was calculated. **RESULTS:** The lowest value of IC₅₀ was obtained for the extraction process carried out with the temperature of 60 °C (powder), followed by the maceration process (powder) with the superoxide assay (4.6 ± 4.6 µg / mL and 17.20 ± 0.6 µg / mL, respectively). In both cases, the value was lower than the IC₅₀ value for positive control (ascorbic acid - 77.5 ± 10.9 µg / mL). These extracts were made with distilled water that presented better value of IC₅₀ than tap water. In this case, polyphenols can combine with Ca²⁺ and Mg²⁺ and be partially retained in the solvent residue, which may explain the best results for distilled water^[3]. Regarding the temperatures analyzed, the best IC₅₀ value was obtained at 60 °C. Certain phenolic compounds may undergo denaturation at high temperatures. Also, the reduced particles increase the contact surface between samples and extraction solvents which can increase the extractive yield and, consequently, its antioxidant capacity^[4]. **CONCLUSION:** The use of distilled water, reduced particle sizes, lower temperatures and longer extraction times (20 minutes) appear to be good factors for the extractive processes of dandelion, affecting its antioxidant activity. It would be important to carry out other antioxidant assays and the determination of total content of phenolic compounds in order to relate it to antioxidant activity.

Keywords: Antioxidant activity; Dandelion; Extraction Time; Particle Size; Phenolic Compounds; Solvent; *T. hispanicum*; Temperature

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Matrix Metalloproteinases-2 and -9 and its Tissue Inhibitors-1 and -2 in Diabetic Patients with Periodontal Disease

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BACKGROUND: Diabetes Mellitus (DM) is a metabolic deficiency, characterized by chronic hyperglycemia that induces several systemic and oral complications. Epidemiological data confirm that diabetes is a risk factor for the development of periodontitis, and is considered the sixth chronic complication of DM^[1]. The base of the relationship between periodontal disease (PD) and DM is the presence of an exacerbated chronic inflammation state. PD is a chronic infection, characterized by the degradation of the structures of the tooth support, the periodontal

ligament and alveolar bone^[2]. Due to the increasing incidence of DM and its complications, such as PD, it is of interest to detect biomarkers of the PD stage, which may lead to the possibility of discovering a therapeutic intervention. Matrix metalloproteinase (MMP) -2 and MMP-9 play a crucial role in the inflammatory processes of DM and DP and are inhibited by the metalloproteinase tissue inhibitor (TIMP) -1 and TIMP-2, respectively^[3]. **OBJECTIVE:** The aim of this study is to evaluate the impact of type 1 DM and PD on the salivary levels of MMP-2, MMP-9, TIMP-1 and TIMP-2 and respective correlations in type 1 DM subjects in comparison to a healthy control group. And, evaluate the levels of MMP-2, MMP-9, TIMP-1 and TIMP-2 according to the index of periodontal disease introduced by Ramfjord 1959 (IDP Ramfjord). **RESULTS:** The study sample consisted of 12 diabetic patients and 9 healthy controls followed at the District Center Hospital. The saliva samples were collected and the described parameters were evaluated through the slot blot technique. Salivary levels of MMP-2 and MMP-9 were tendentially higher in the diabetics, TIMP-1 levels were tendentially lower, and TIMP-2 levels did not differ significantly between groups. The ratio of MMP-9 / TIMP-1 levels was higher in the diabetic group (0,23±0,01) in comparison with control group (0,2±0,01) ($p<0,05$). **CONCLUSIONS:** Levels of MMP-9 and TIMP-1 tended to be higher in the group of diabetics with poor oral health. The levels of MMP-2 and MMP-9 in diabetic patients, as well as levels of MMP-9 and TIMP-1 in patients with poor oral health (periodontal disease), tended to be higher, possibly due to the exacerbated inflammation present in DM and PD. Thus, the possibility of a significant relationship between increased MMPs and the progression of DM and PD can't be ruled out, being some differences not statistically significant, probably due to the reduced number of patients with DM type 1 and PD studied.

Keywords: MMP-9, TIMP-1, Diabetes Mellitus, Oral Health, Periodontal Disease

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Radionic Crystals in water alkalization and in the decrease of Organic Clusters

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BACKGROUND: The Radionic energy, described by Albert Abrahams in the 20s of the 19th century^[1,2], which through electrical machines, today electronic, we managed to interfere mentally in the atoms. Nanotechnology demonstrated that we could reduce any element, where Richard Feynman^[3], considered the father of nanotechnology, described in 1959 that it would be possible to write all the words written in the mankind history, in