allows for the implementation of proximity interventions, such as nursing home care, resulting in an improvement of the health of individuals, families, and communities. The system mentioned above is the one implemented in health centres called S-Clinic and developed by the Serviços Partilhados do Ministério da Saúde (SPMS). However, this process presents some problems, such as the time spent collecting patient data; the introduction of the intervention data into the system, and the lack of a support structure for the data records extracted from the patient by the nurse.

**Objective**
Combining technological evolution, the importance of PHC and the difficulty of the nursing process at home, we propose the development of an application for mobile devices, with the objective of allowing nurses to import patient data through information, data records of the interventions carried out in an electronic format, which are then exported to the system.

**Methods**
In this way, the application will facilitate the work of the nurse because it replaces the records on paper, thus allowing a better collection and structuring of the data, as well as the increase of the efficiency of the work activity, and reduction of the time spent for the collection and introduction of data in S-Clinic. We had to study the essential contents of the nursing process at home and implemented in the system, in order to create a data structure with the closest resemblance to S-Clinic. Then, to obtain this information a meeting was held with nursing experts to provide their knowledge in this area.

**Results**
In this meeting, the contents considered essential for a domicile were addressed, and the key points were: nursing focus or diagnosis and nursing intervention. The data model was implemented in order to cover all the contents. Some security measures that could be implemented have also been discussed, in order to protect data. After the application development was complete, a meeting was held with some of the nursing experts present at the first meeting to gather requirements, in order to evaluate the system.

**Conclusions**
The feedback was very positive, encouraging the research team to continue this development because they see a good solution for the future of the PHC at the home environment.

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**Keywords**
Nursing, Health information system, Digital health, Innovation, Development.

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**P71**

**Antioxidant activity of the garlic (Allium sativum L.) submitted to different technological processes**

Carla Sousa, Catarina Novo, Ana F Vinha

1Unidade de Investigação em Energia, Ambiente e Saúde, Centro de Estudos em Biomedicina, Fundação Fernando Pessoa, 4249-004 Porto, Portugal; 2Universidade Fernando Pessoa, 4249-004 Porto, Portugal; 3REQUIMTE/LAQV, Departamento de Ciências Químicas, Faculdade de Farmácia da Universidade do Porto 4051-401 Porto, Portugal

**Correspondence:** Ana F Vinha (acvinha@ufp.edu.pt)

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**Background**
Garlic has become extensively investigated by its benefits for health. Some therapeutic activities are attributed to the garlic, namely, antioxidant, hepatoprotective, anticancer and antitumor properties, among others [1-3].

**Methods**
Therefore, the total phenolic content (TFC) and the total flavonoid content (TFC) have been determined, as well as the antioxidant...
properties of extracts of the different forms of presentation/parts of the garlic existing in the market (bulb, in powder and in tablets/capsules), by the radical 2,2-diphenyl-1-picrylhydrazyl (DPPH) method and by evaluation of the ferric reducing antioxidant power (FRAP). The scavenging capacity of the same extracts against reactive species (O$_2^-$, H$_2$O$_2$, NO) was also evaluated. Finally, the biological activity of the presentation forms of garlic existing in the market was compared with the one of the garlic peel, considered food waste, taking also into account some variables that can influence the properties of the bulb, that is, boiling and freezing.

**Results**

TPC was superior in the frozen chopped garlic sample, having the garlic tablets the lowest content. The cooked garlic presented an inferior value of TPC when comparing with the raw chopped bulb. These results indicate that cooking and freezing methods intervene directly with the total phenolic content, but in an opposite way. The extract of cooked garlic had the higher value of TPC, belonging to the lowest tenor to garlic tablets. Radical DPPH$^-$ and FRAP methods allowed to verify that the cooked garlic extract evidenced a superior antioxidant activity. This result can be explained by cell wall rupture derived from heating, provoking antioxidant substance release, new and/or stronger antioxidant substance formation or oxidant enzymes inhibition [4]. The frozen chopped garlic extract presented the highest scavenging capacity of the three studied reactive species. In general, the higher the total phenolic content, the greater the capacity of inhibition of reactive species NO$^-$, O$_2^-$, and H$_2$O$_2$.

**Conclusions**

This study has showed that the diverse forms of presentation/parts of the garlic possess high bioactive compounds content, and consequently antioxidant activity, presenting health benefits.

**References**


**Keywords**

Allium sativum L., Bioactive compounds, Antioxidant activity, Reactive species.

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**P73**

**Influence of gamma irradiation in the antioxidant potential of pumpkin seeds and mung beans**

Anabela Macedo$^1$, Carla Sousa$^2$, Ana F Vinha$^{3,3}$

$^1$Universidade Federal de Sao Paulo, 4249-004 Porto, Portugal; $^2$Unidade de Investigação em Energia, Ambiente e Saúde, Centro de Estudos em Biomedicina, Fundação Bernado Pessoa, 4249-004 Porto, Portugal; $^3$REQUIMTE/LAQV, Departamento de Ciências Químicas, Faculdade de Farmácia da Universidade do Porto 4051-401 Porto, Portugal

**Correspondence:** Ana F Vinha (acvinha@ufp.edu.pt)

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**Background**

 gamma irradiation is a standard pulmonary function test that measures how much air an individual inhales or exhales volumes of air as a function of time. It is the most important and most frequently performed pulmonary function testing procedure, having become indispensable for the prevention, diagnosis and evaluation of various respiratory impairments. However, there have been only a few studies addressing the effect of physical activity on pulmonary function test results and investigating the association between body composition and respiratory parameters in sports activities [1-3].

**Objective**

The objective of this study was to verify if there are differences in spirometry values in children aged between 6 and 12 years who practice swimming complemented with water walking at the end of each session and those who only practice swimming.

**Methods**

In this study 28 subjects (mean age, 7.68 ± 1.16 years) participated and were divided into two groups: swimming group (SG) (N=9) and...