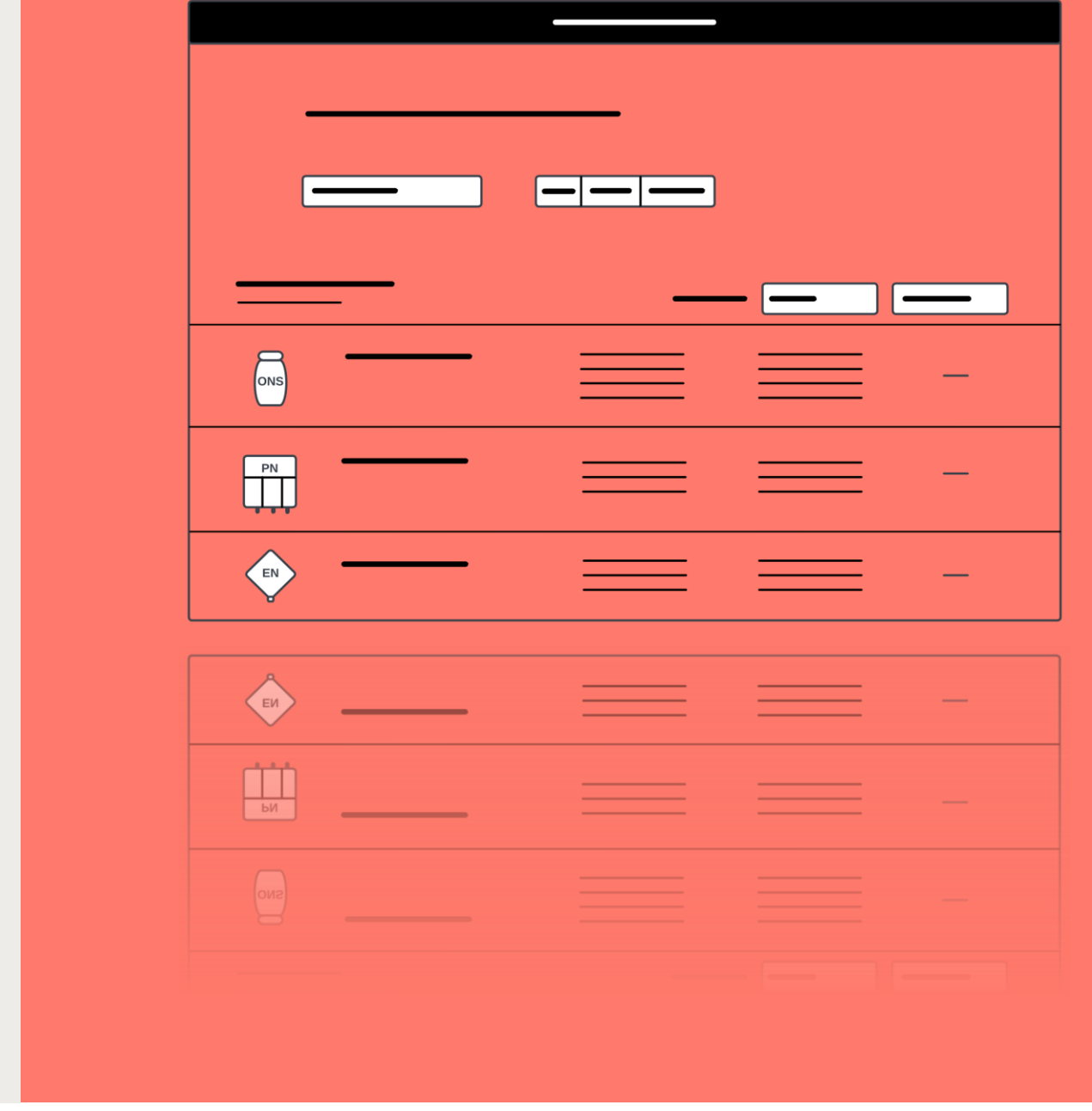# NutriPro™

A Product-specific E-tool for Healthcare Professionals Guidance in Clinical Nutrition

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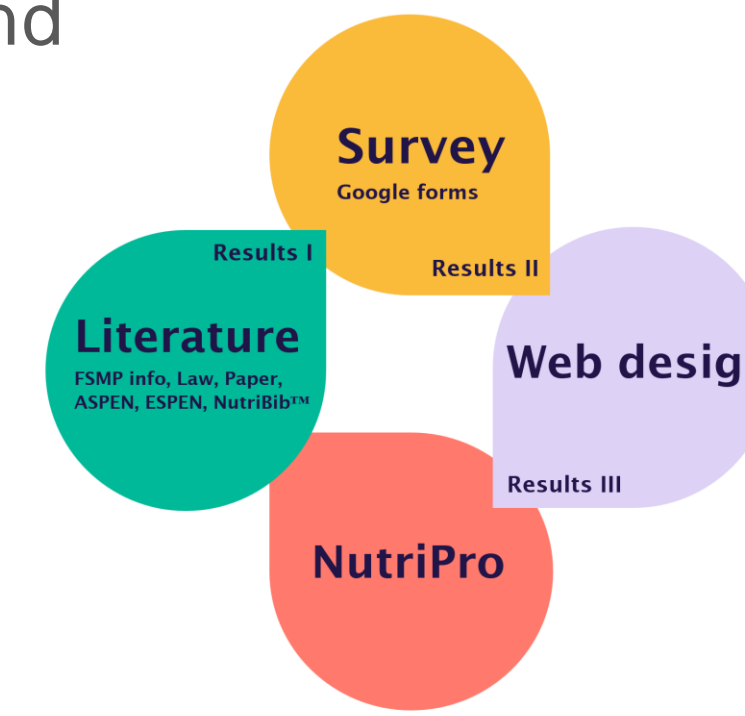
INTRODUCTION

Malnutrition is a **growing** concern around the world [1]. About 20% to 50% of Swiss hospitalized patients are affected by or are at risk of **malnutrition**. Several randomized controlled trials have shown that **individualized nutritional therapy** can significantly improve patient outcomes, reducing severe complications and mortality with a number needed to treat (NNT) of 20 and 37, respectively [2, 3]. There are around **600 nutritional products (NPs)** from **11 manufacturers** on the Swiss market that help to improve energy and protein intake of malnourished patients (covered by health insurance). The comparability and correct use of NPs and their efficacy is hampered by the wide range of NPs, their diverse composition and the different ways in which **information** is presented. The selection and the correct use of NPs is **complex, time-consuming** and could be facilitated by digital, reliable, **up-to-date**, and **easily accessible product information.**
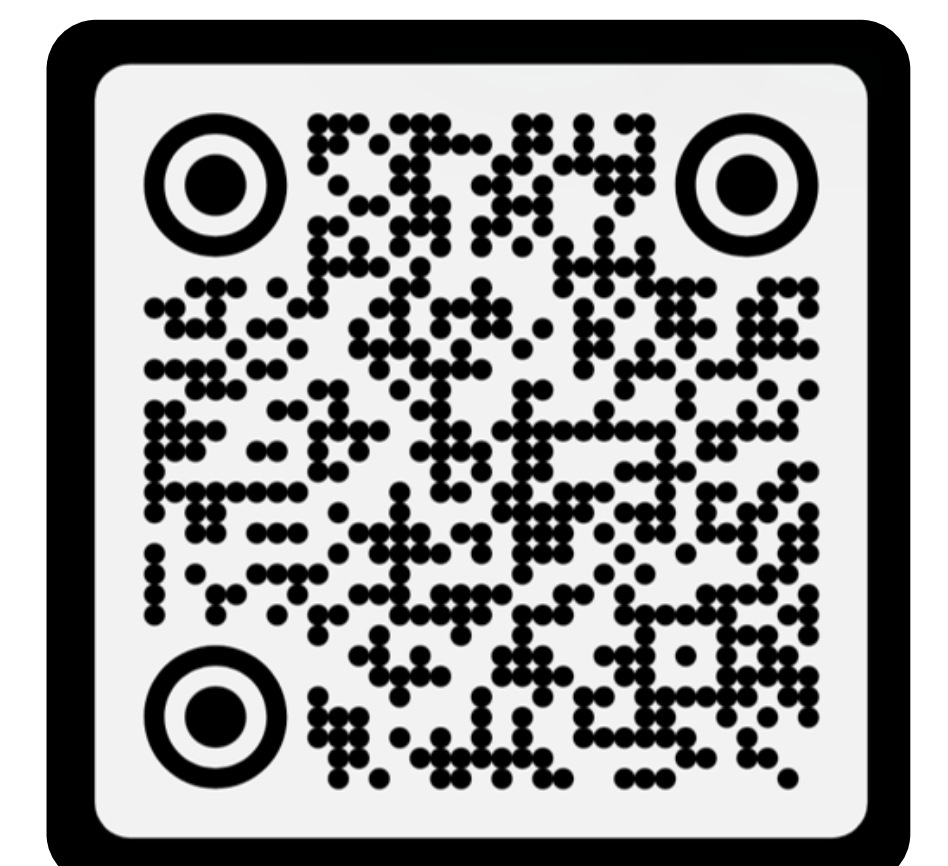
NutriPro™ Demo E-Tool

Clinical Nutrition E-Tool Ecosystem

AIMS

✓ Develop and establish a **digital platform** (**NutriPro™**).

✓ **Centralized information** overview.

✓ Make the process of **choosing** the right **personalized** product **easier and faster**.

✓ **Improve the quality of care and outcomes**, as well to reduce healthcare **cost.**

METHODS

A comprehensive **literature review** was carried out to collect the widest **product information** possible. This data was then used to create an **online survey** using Google Forms. The survey were then analyzed to determine the most relevant **selection criteria** and to **structure** the app. At the same time, **a user-friendly** web **design** was developed to ensure that important details were not overlooked. Lastly, it's essential that NutriPro is **regularly updated** with the latest literature. All these elements work together to deliver the best **quality** product possible.
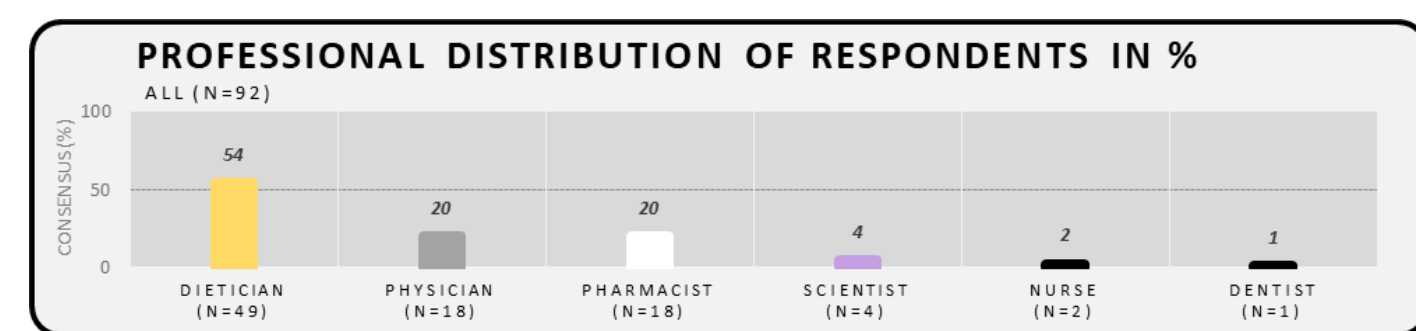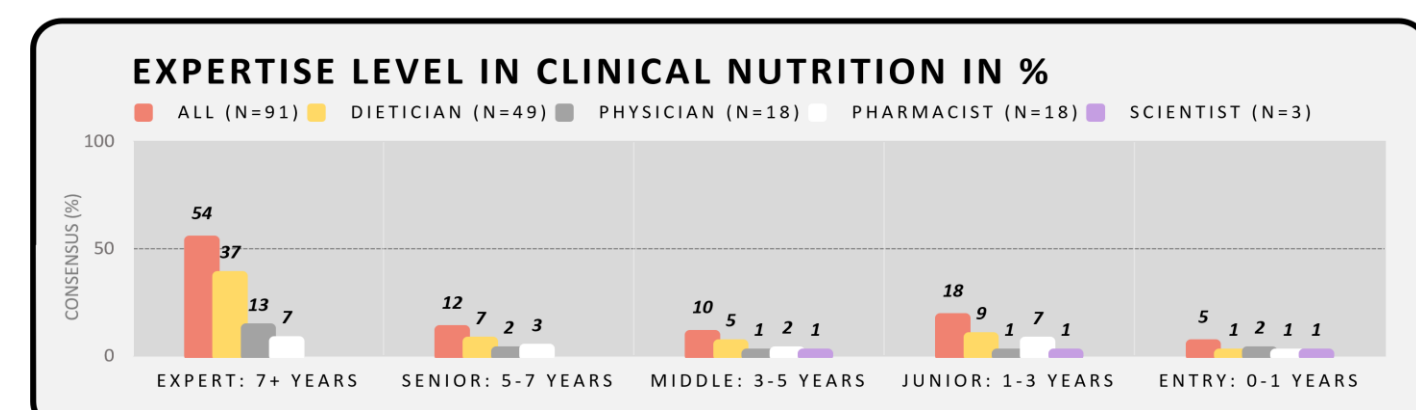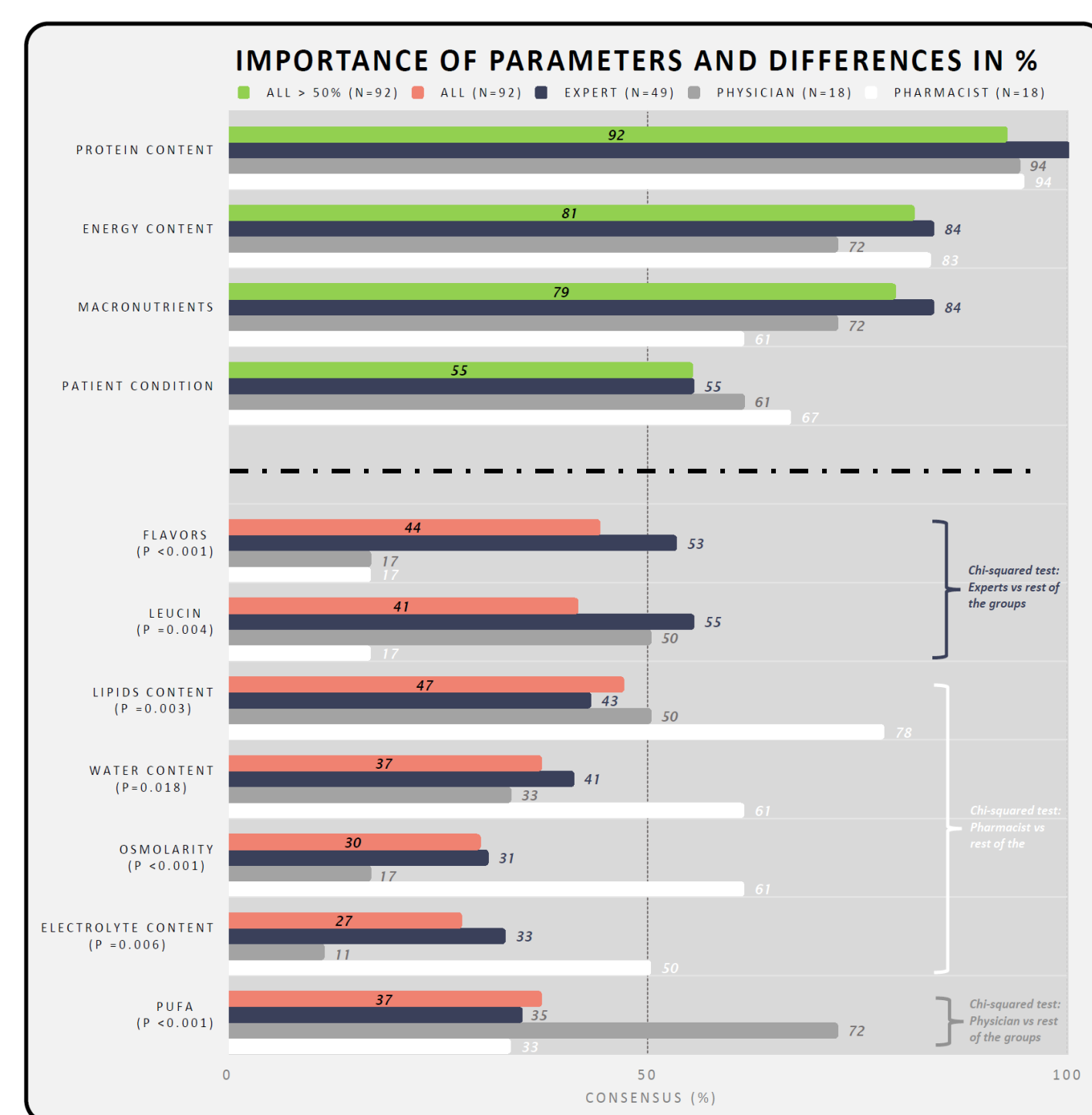

RESULTS

Graph. 1: Professional activity in %. (more than one choice was possible).

Graph. 2: Experience level in clinical nutrition in % (only one choice was possible).

Graph. 3: Parameters in % - Responders selected the most important parameters they look for in products to best meet their patients' needs (more than one choice was possible). The top third shows the most important parameters. Below, we have all the key differences which were significant (p < 0.05) for the specific subset of professionals (Chi-square test).

In total **24 out of 26 cantons** were represented, 3 Swiss regional language areas were covered, 73% of the responder where from the German-speaking canton, followed by 20% French-speaking and 7% Italian speaking. Of a total of **92 Swiss HCPs**, **the majority** (54%, n=49) reported to be an **experts** in nutrition (>7 years of experience). The most important parameters to characterize the NPs are **energy content** (81% consensus, n=73), **macronutrients** (79% consensus, n=71) with a focus on **protein content** (98% consensus, n=89), and **patient's condition** (56% consensus, n=50).

Some parameters were also highlighted as significant by individual professions. **Flavors** (53% consensus, n=26, p <0.001) and **leucin** (55% consensus, n=27, p =0.004) were relevant to Experts. **Lipid content** (78% consensus, n=14, p =0.003), **water content** (61% consensus, n=11, p =0.018), **osmolarity** (61% consensus, n=11, p <0.001) and **electrolyte content** 50% consensus, n=9, p =0.006) were relevant to pharmacists. **PUFA** was relevant to physicians (72%, n=13, p <0.001).
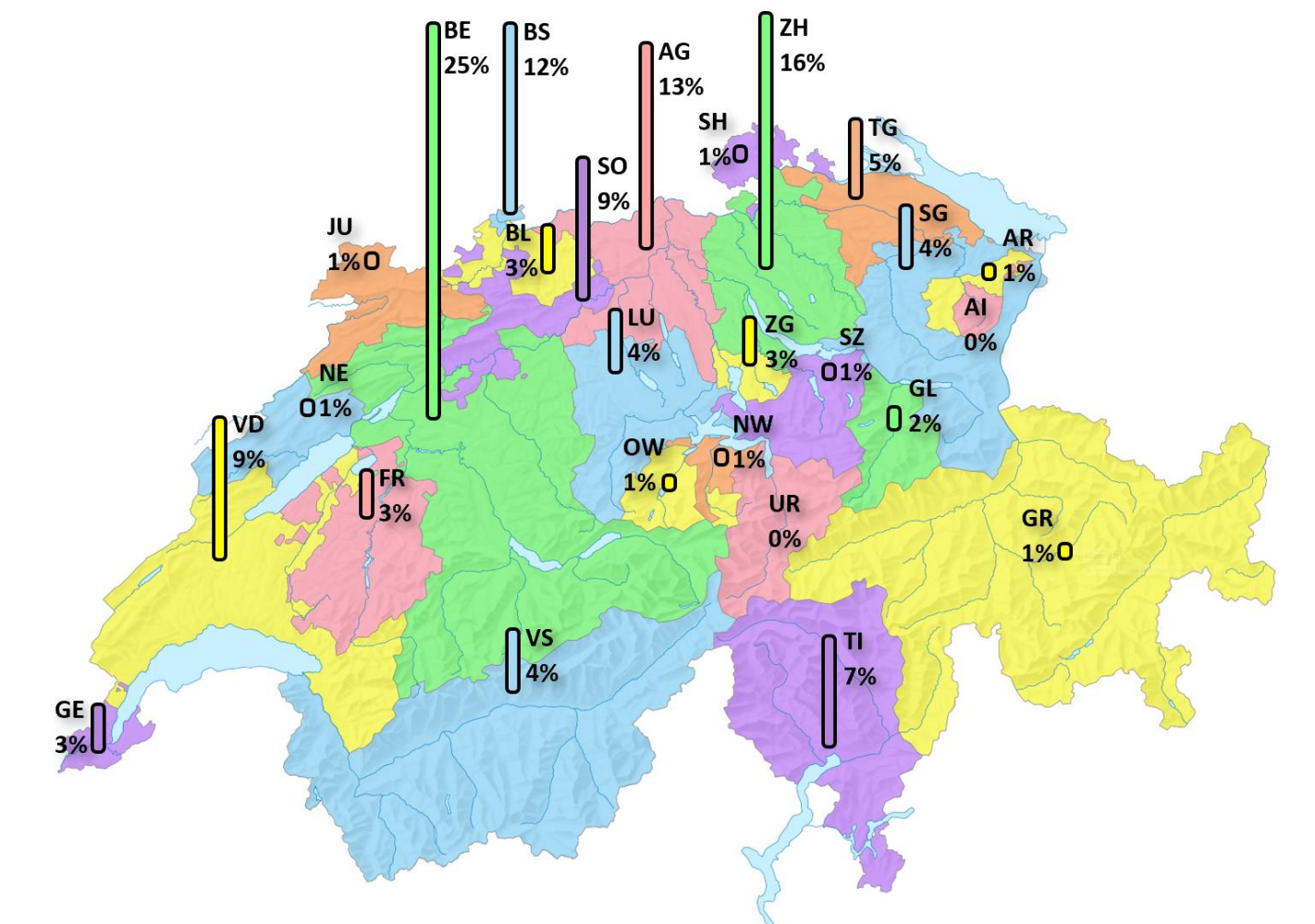

Fig. 1: Swiss Map with the distribution of the responders adapted from [4] (more than one choice was possible). The colors are arbitrary to improve readability.
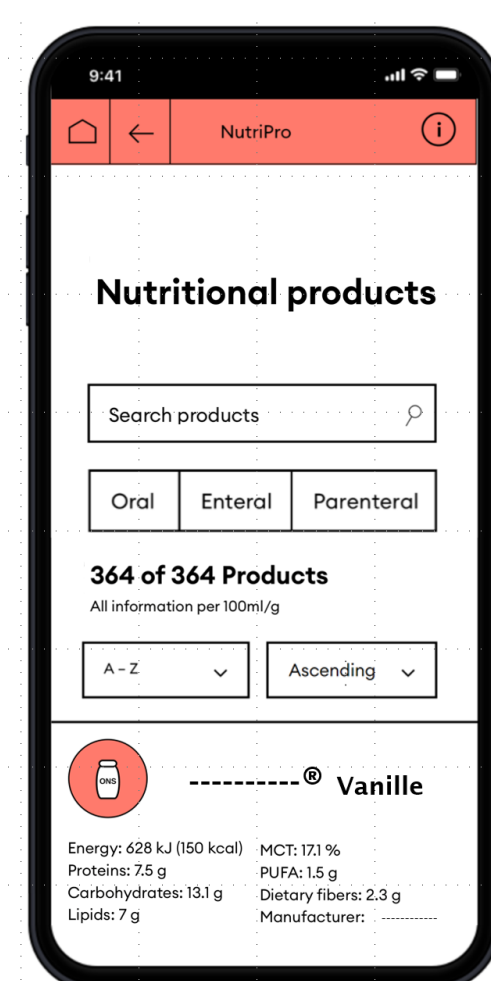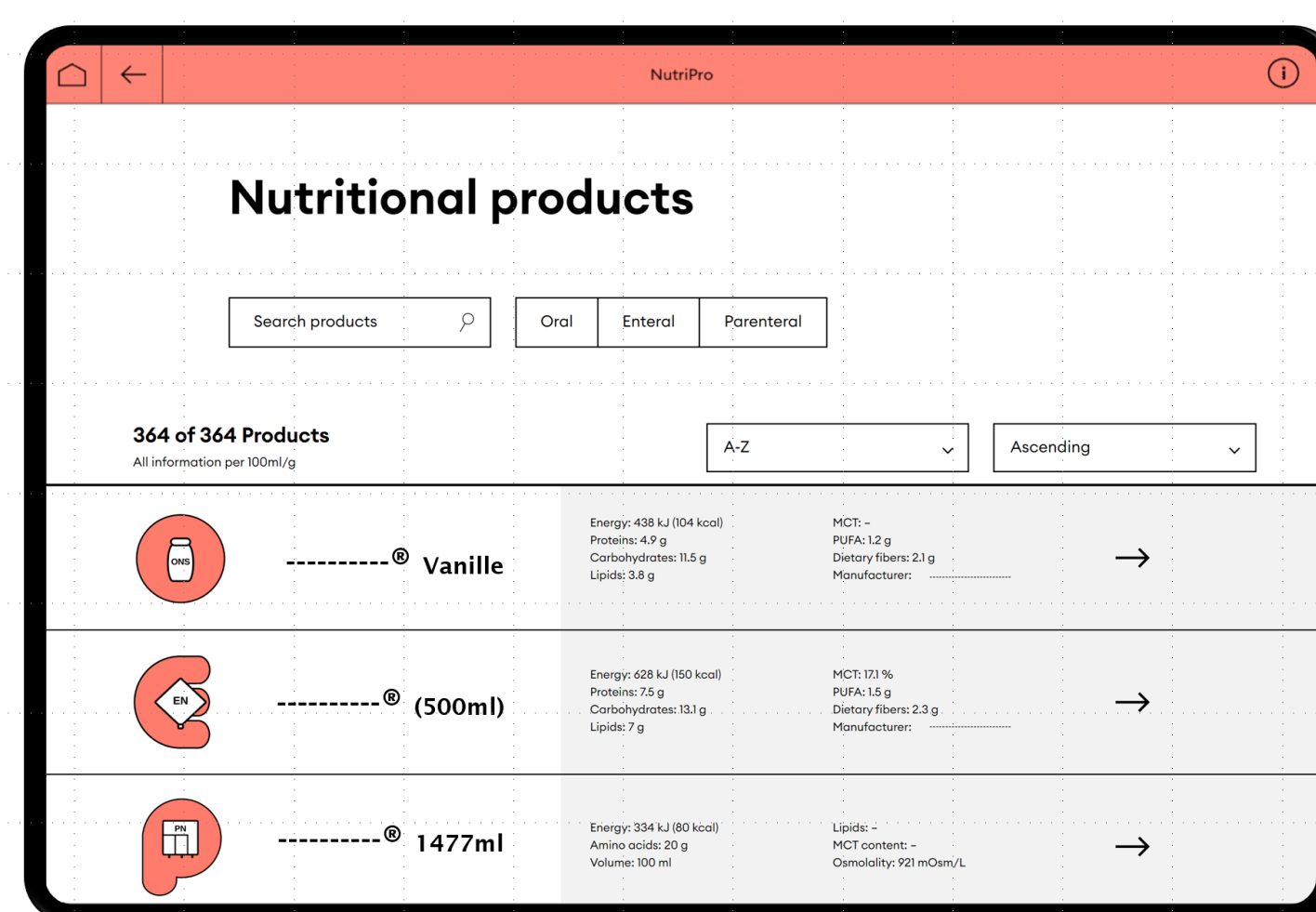

Fig. 2: Homepage PC/Tablet (left image) and Mobile (right image). The first main features are the search bar, the 3 main filter options (Oral, Enteral and Parenteral) and the priority order.
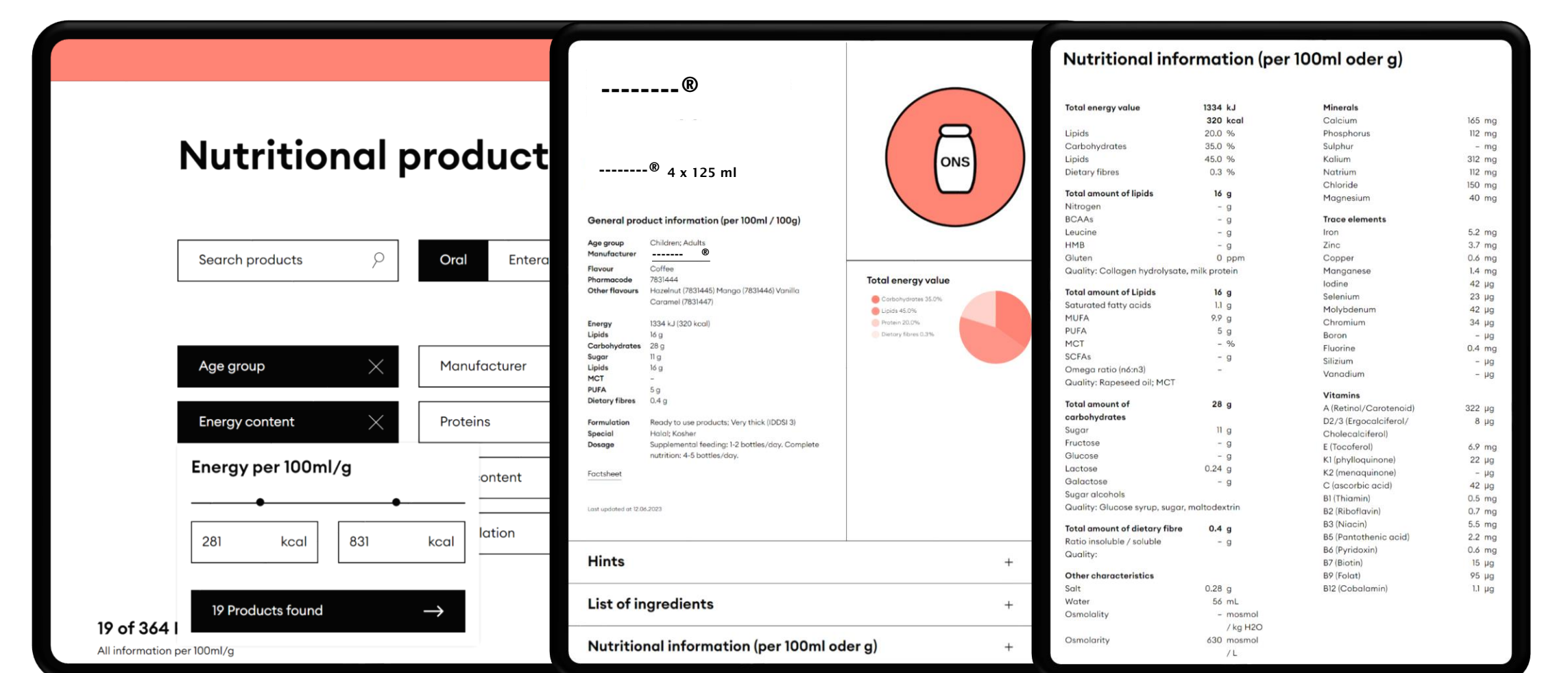

Fig. 3: When choosing one of the 3 main filters (left image), 12 new options are available, ranging from quantity (energy, protein, etc. in intervals) to quality (Flavors, Manufacturer, etc. with checkboxes). Once a product is selected, a standardized fact sheet (middle image) opens in a new browser tab with the most relevant information, followed by more detailed and complete information(right image). This allows for easy comparisons between products.

CONCLUSIONS

NutriPro™ is a **novel e-tool** to support NP selection based on **standardized** official **data**. It can be embedded in other app-based medicinal nutrition support tools to **improve** the **quality** and appropriateness of **nutritional care** and **outcomes**.
Efficiency and **suitability tests** with HCP users will evaluate the app **to improve clinical nutrition support.**

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