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## ***Sustainable Diet and Metabolic Health***

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## **Food Consumers' Shift Towards More Meat-Restricted Diets: Identifying Flexitarians in the Swiss Population Using Food Purchase Receipts**

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**Background:** Shifting from diets high in animal-source foods (ASF) towards more plant-based eating patterns can potentially improve the health of people and environment. Reducing, whilst not completely omitting consumption of ASF, in meat and meat-derived products is also referred to as a flexitarian diet. Previous assessments of the prevalence of flexitarian diets have predominantly relied on self-reported measures without objective dietary intake analyses.

**Aim:** To leverage food purchase patterns to map the share of Swiss households that meet the criteria of a flexitarian diet pattern according to a self-developed classification algorithm.

**Method:** Analyses were performed using the data of the Swiss Nutrition Atlas (371 Swiss households with a representative proportion of all three language regions, food purchase receipt collection from grocery stores, restaurants and any other source over two weeks). The flexitarian classification algorithm was developed using the Eat-Lancet planetary health diet targets with adaptations to align with the Swiss dietary recommendations. The criteria for a flexitarian diet (2500kcal/day) entailed restriction of meat consumption to a maximum of 300 grams per week (43g/day), while the maximum for fish and seafood intake was set at 200 grams per week (28.6g/day). Flexitarian households which demonstrated additional ASF restrictions for eggs 175 grams per week (25g/day), dairy (625 calcium equivalents/day for age ≥ 18 years), and butter/cream (10g/day) per day were considered "ultra-flexitarian". Households with complete omissions of meat were classified vegan, ovo-lacto-vegetarian, or pescovegetarian. Remaining households were declared omnivorous.

**Results:** The share of flexitarian households was 18.3%, of which only 25% were considered ultra-flexitarian. The share for ovo-lacto-vegetarian and pescovegetarian diets was 7.8 and 2.7% (50% of each group met the planetary health target for all ASF categories). 0.5% were classified vegan. Total fat consumption did not discriminate flexitarian from omnivorous households, but the former showed greater energy shares from protein at the expense of carbohydrates. Recommended dietary fibre target (14g/1000kcal) was not met by any diet group. Salt consumption was highest among omnivorous households, with no differences among other groups.

**Conclusions:** Less than 20% of Swiss consumers follow a flexitarian diet, and only 5.1% meet additional planetary health targets for all ASF. Despite the flexitarian diet, dietary fibre targets were not achieved, while benefits were seen for salt intake. Apart from underscoring unmet nutritional and sustainability goals, we hereby present the potential of commercial data as novel approach for assessing dietary patterns with greater objectivity and compositional details.

