# Informed Diet Selection: Increasing Food Literacy through Crowdsourcing

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## Abstract

The Internet offers plenty of options for those who want to lose weight. Choosing among the practically unlimited number of weight loss diets, exercises, and pills, advertised as borderline magical, is however challenging. We present *The Diet Explorer*, a crowd-powered, knowledge base that can be queried in real-time to discover weight loss diets that best match personal needs. Our long-term goals are to help people in making better-informed dieting decisions and ultimately reach more satisfactory diet outcomes.



## Author Keywords

Crowdsourcing; Information Discovery; HFI.

## ACM Classification Keywords

H.5.m. Information interfaces and presentation (*e.g.*, HCI): Miscellaneous.

## Introduction

The obesity epidemic is one of the greatest threats to health and wellbeing throughout much of the world. Despite information on healthy lifestyles and eating habits being more accessible than ever before, the situation seems to be growing worse [4]. And for a person who wants to lose weight there are practically unlimited options and temptations to choose from. Food, or dieting, is a booming business, and thousands of companies and vendors want their cut by pitching their solutions, particularly online (Google) where people first turn to find weight loss information [3]. In our work, we have set to harness the wisdom of crowds in making sense of available diets, and to offer a direct way for users to increase their food literacy during diet selection.

## The Diet Explorer

*The Diet Explorer* is a crowd-powered online knowledge base that contains an arbitrary number of weight loss diets that are all assessed in terms of an arbitrary set

*Preliminary User Study*

50 participants were recruited from *Prolific Academic*, a crowdsourcing platform for academic research. Participants provided ratings for 20 diets in terms of 6 criteria (50*20*6 = 6000 unique ratings).

Then, 20 new participants from the same source were tasked to imagine they need to lose weight, find diets with The Diet Explorer, and to fill in a final survey.

Finally, another 20 participants were recruited for the same task, but instead of our tool they were to use Google to find their optimal diets (a between-subjects design).

Our results show no statistically significant difference observed in trustworthiness, relevance, and satisfaction of results between The Diet Explorer and Google. However, our results show that The Diet Explorer is significantly faster to use for discovering diets.

Based on participant feedback, the tool can be improved by including links to meal plans and considering dietary restrictions (*e.g.*, vegetarian or vegan diets).

of criteria. Both can be added in runtime, but to begin with we have bootstrapped the tool with 20 weight loss diets from Wikipedia. Examples of included criteria are "long term success potential", "affordability", and "overall nutrition" (see Figure 1, top).

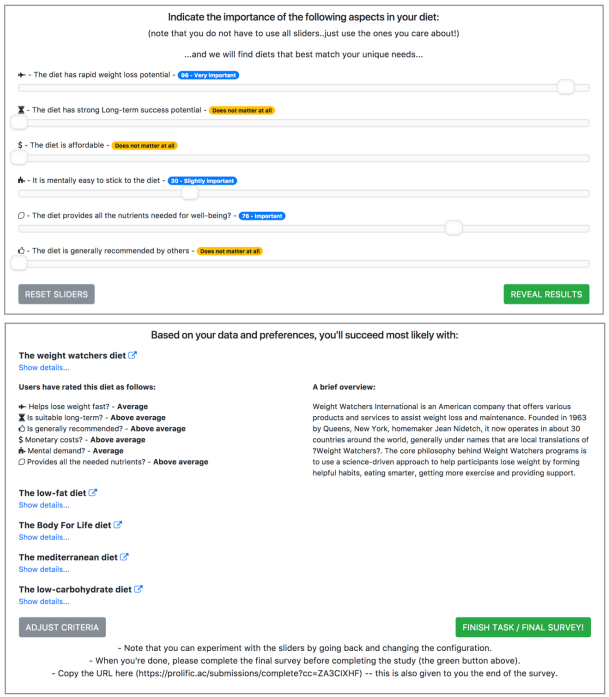


Figure 1. Top: indicating criteria importance. Bottom: best-matching results, based on crowdsourced knowledge.

The online tool relies theoretically on *wisdom of the crowds*, and the underlying crowdsourcing concept has been shown to provide trustworthy results in related studies [2]. In this work as well, the crowds first assess all the options (*i.e.*, diets) in terms of all the criteria using a scale from 0 to 100. Once the knowledge base contains sufficiently data, end users can then use the same criteria by indicating their relative importance to discover the diet(s) that best match their personal needs and preferences. Finally, the best matches are shown to the user (Figure 1, bottom).

## Discussion

There is no clear consensus among the weight loss communities on what are the best diets, nor can there ever be. Different people have different needs, and diets have different characteristics. Thus, people often opt for personalised diet plans, even if this might put their own health at risk [1].

Using our embeddable tool, diet-literate webmasters can help their audiences to discover reliable diets. They can also choose to either have the crowds assess the diets, or simply hire experts to assess the diets. Going forward, we will include "scientific validity" as one of the criteria. The developed tool is flexible in this regard, and we believe that it can be used as a reliable and trustworthy starting point for those interested in starting on a weight loss diet.

## References


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