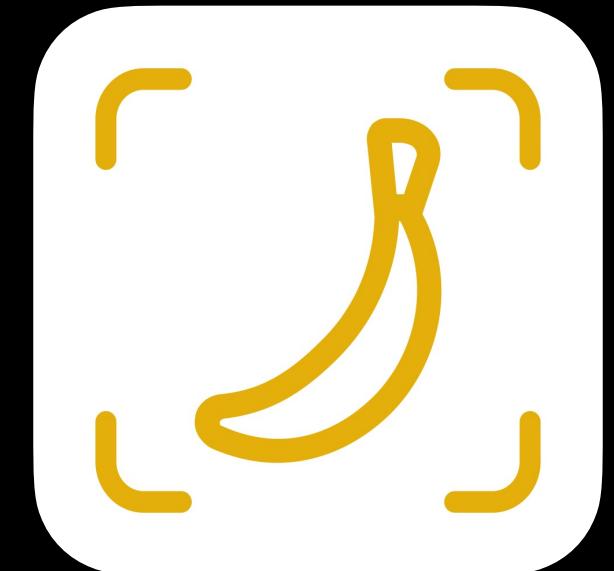


Nutrify AI Grant Application

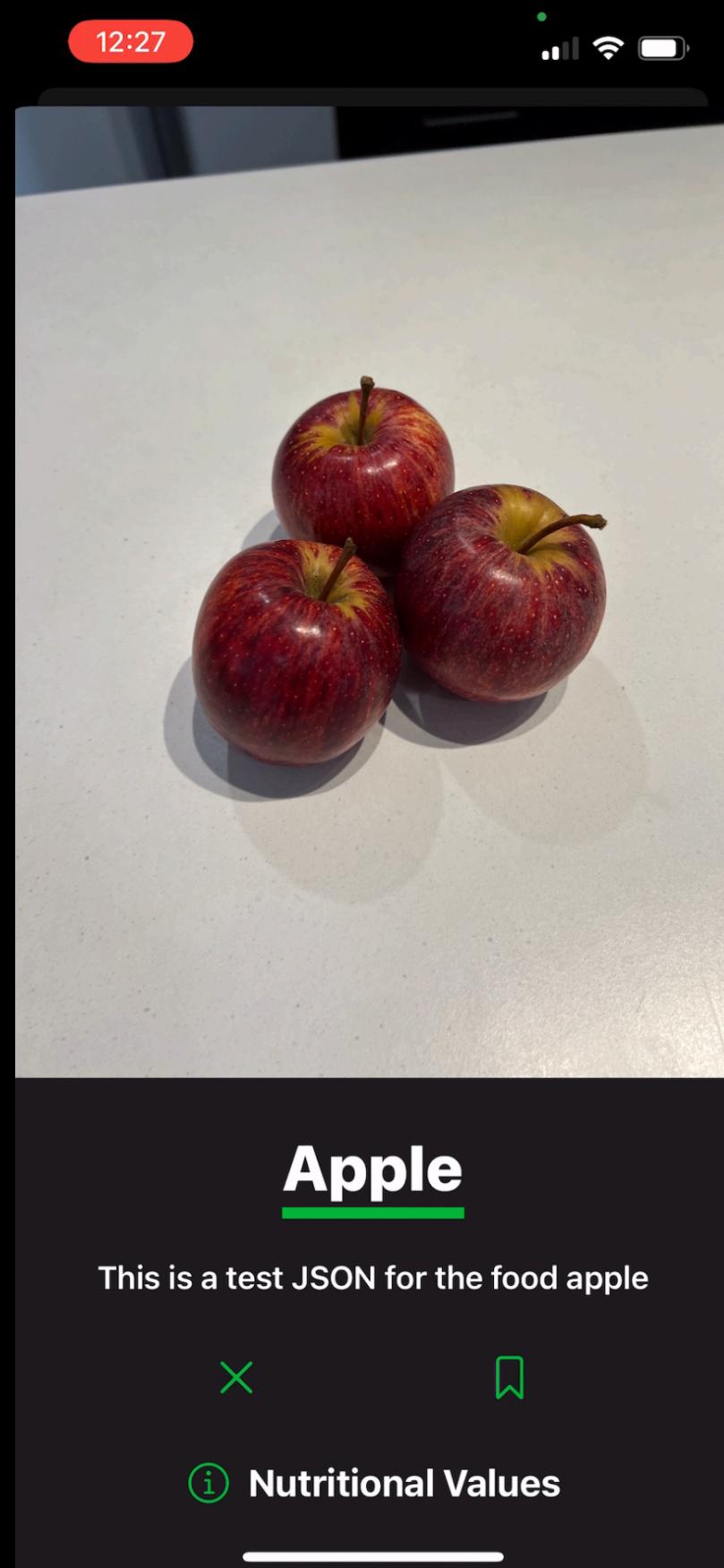


<https://nutrifyaigrantapplication.com>

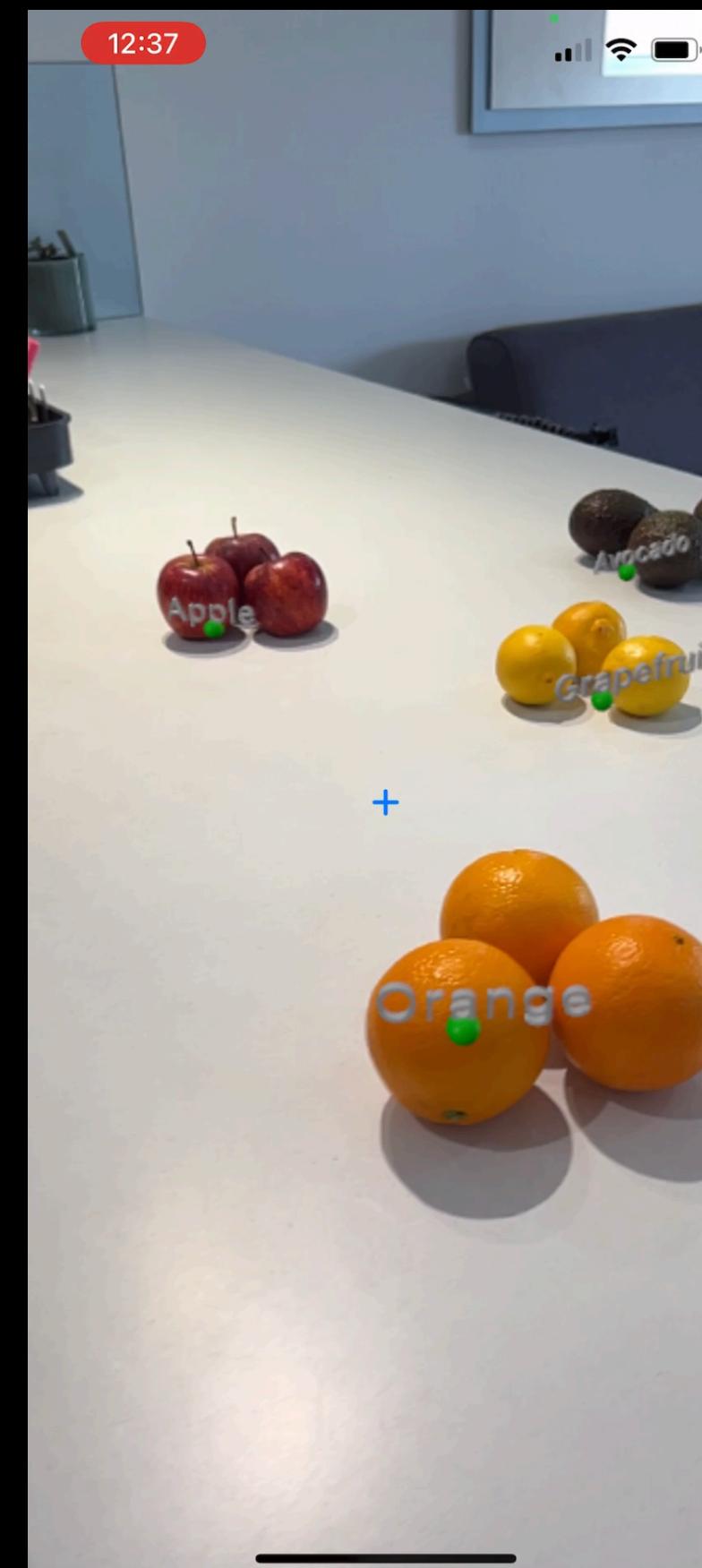
What is Nutrify?

Take a photo of food and learn about it.

Photo mode



Live mode



Nutrify: take a photo of food and learn about it.

Note: Nutrify is a work in progress.

Try taking or uploading a photo of food and find out its macronutrients.

Upload Image

Predicted food: Steak

Macronutrients per 100g:

- protein: 22.7g
- carbohydrates: 0g
- fats: 5.32g

Time taken: 0.4170 seconds

Is this correct?

Yes No

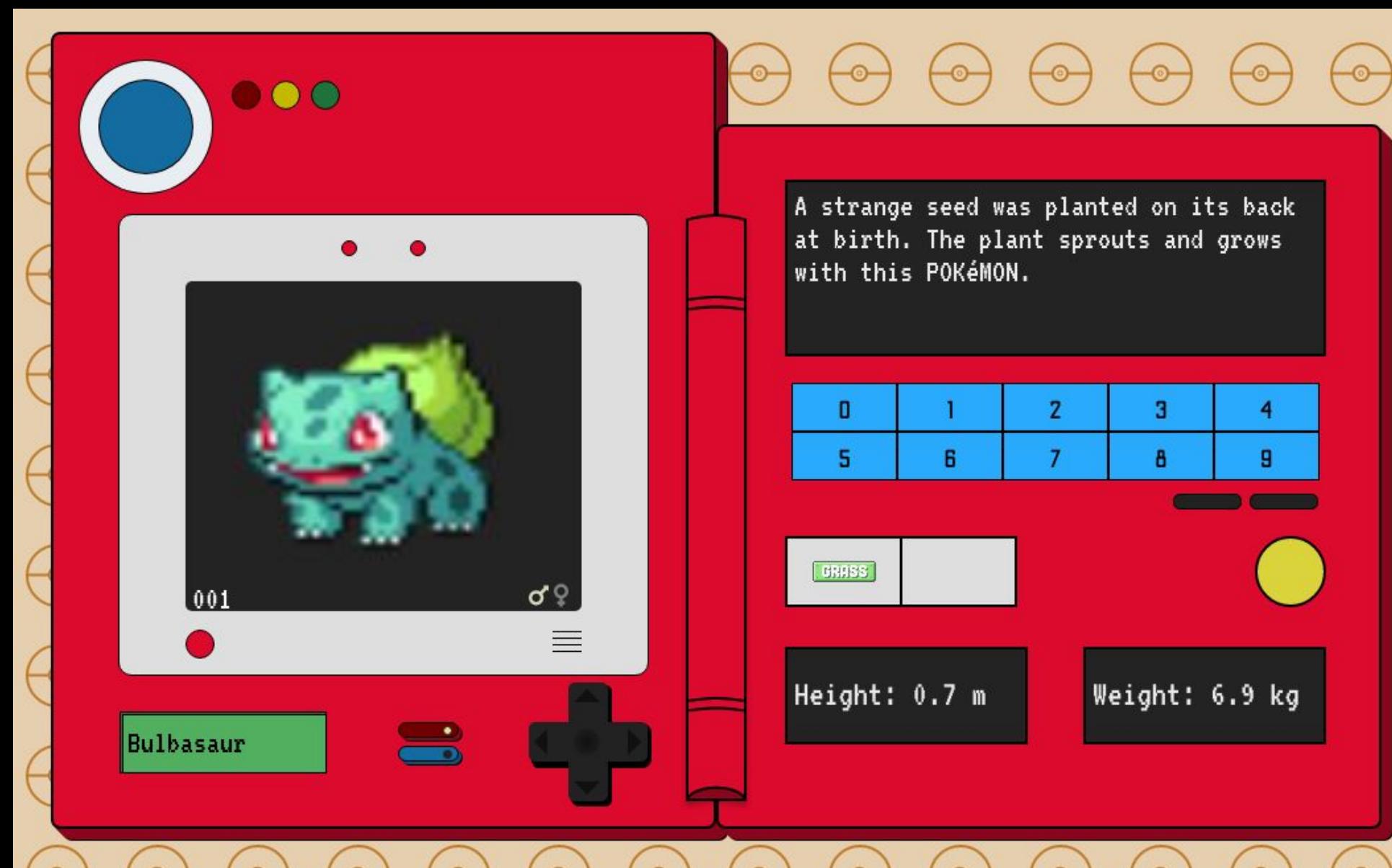
<https://nutrify.app>

iOS app demo video: <https://youtu.be/JvzPbuPEay4>

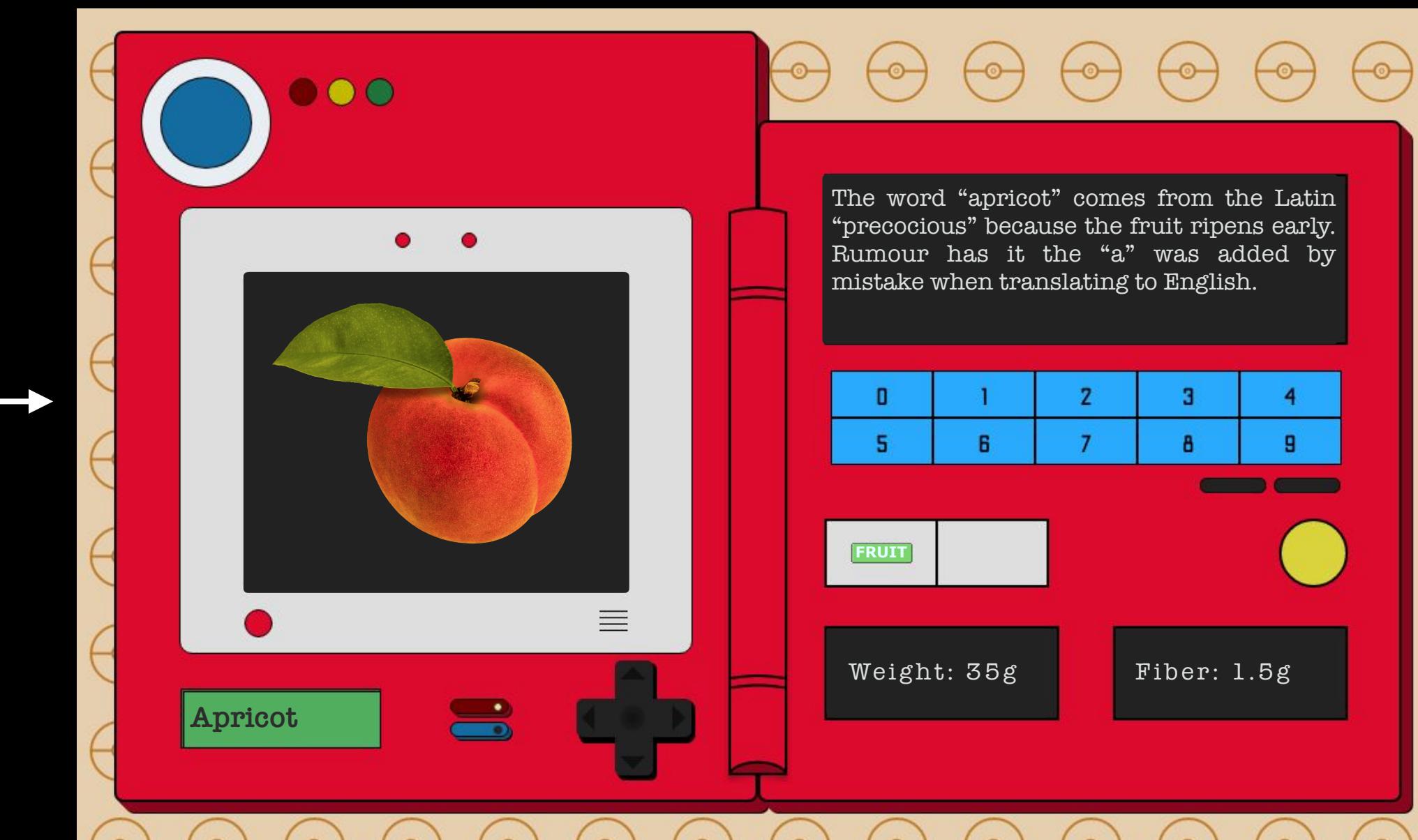
What is Nutrify?

Nutrify is...

- ...a nutritionist/chef in your pocket
- ...a search engine designed specifically for food
- ...a Pokédex for food



Pokédex

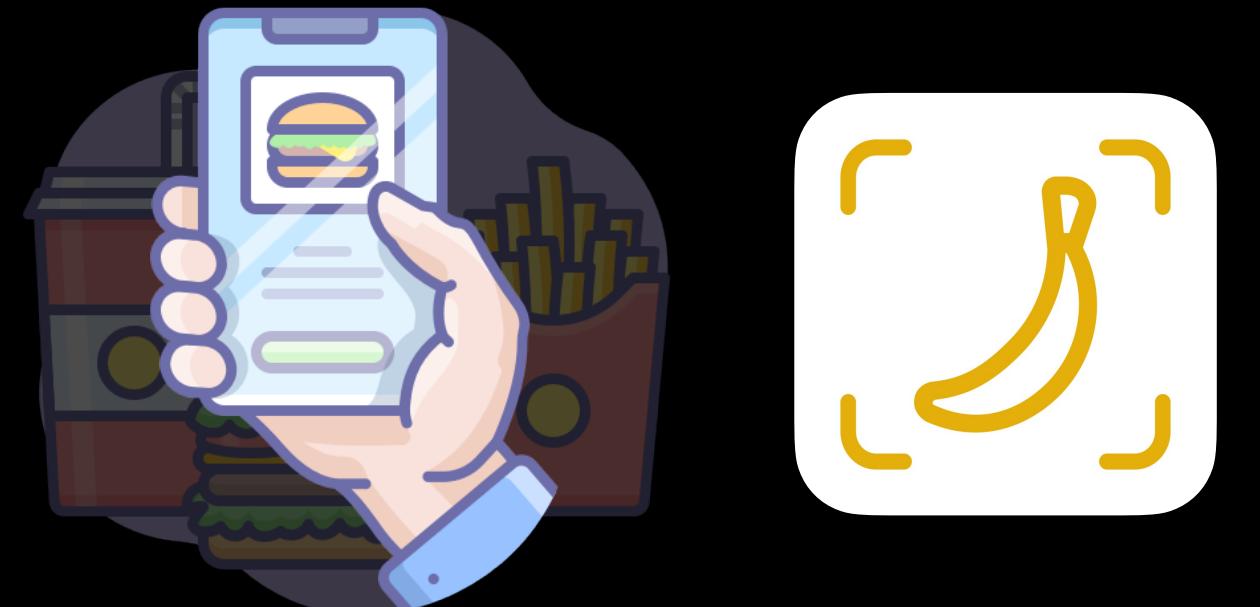


Nutrify

What is Nutrify?

How to know
what you're
eating

(scalable)
Top down (learn about foods
available) — Nutrify!



(not-so scalable)

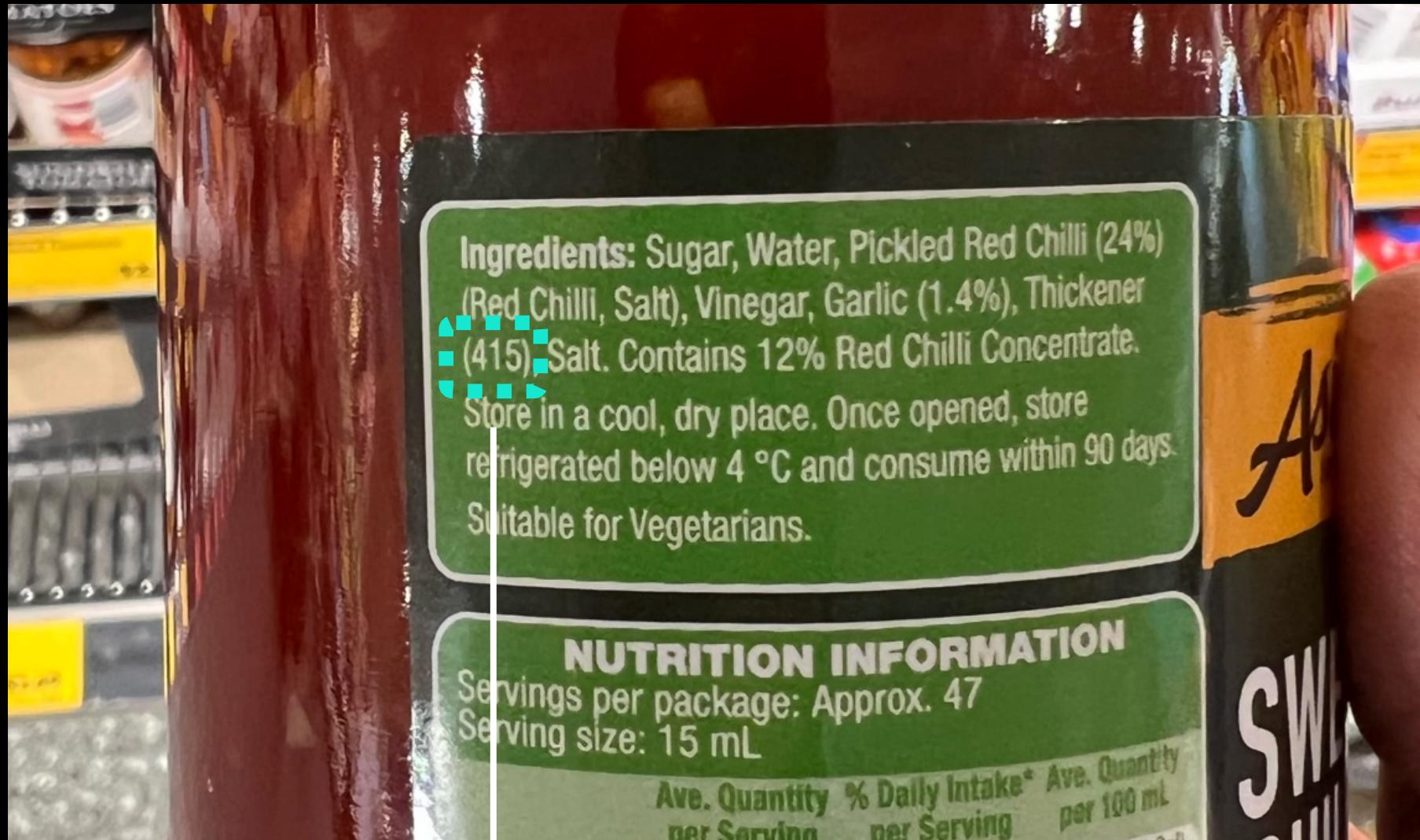


Bottom up (grow your own food/
market gardens)

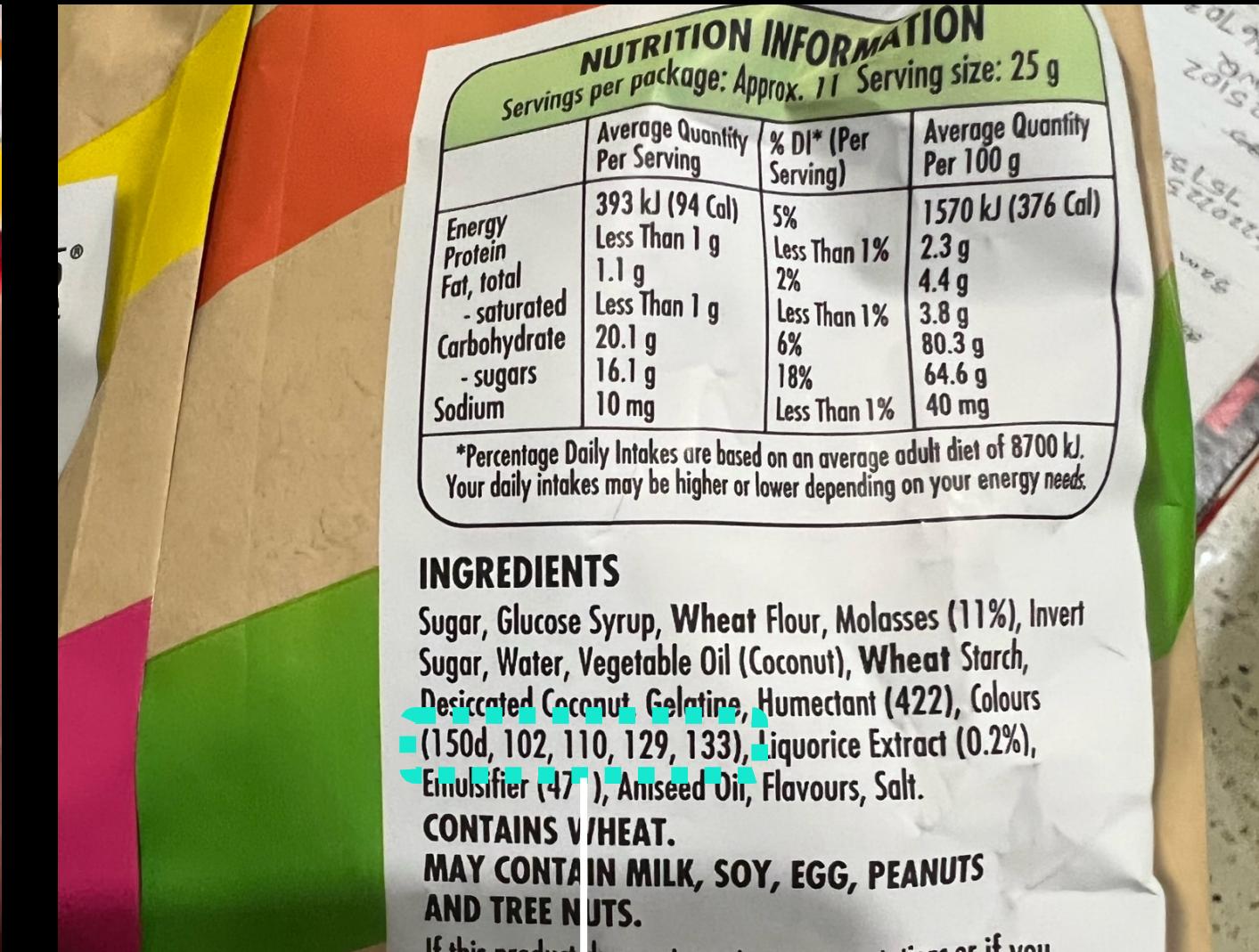


Why Nutrify?

Food labels are confusing 😐



Xanthan gum



Caramel colour, yellow colour, yellow colour 2, red colour, blue colour

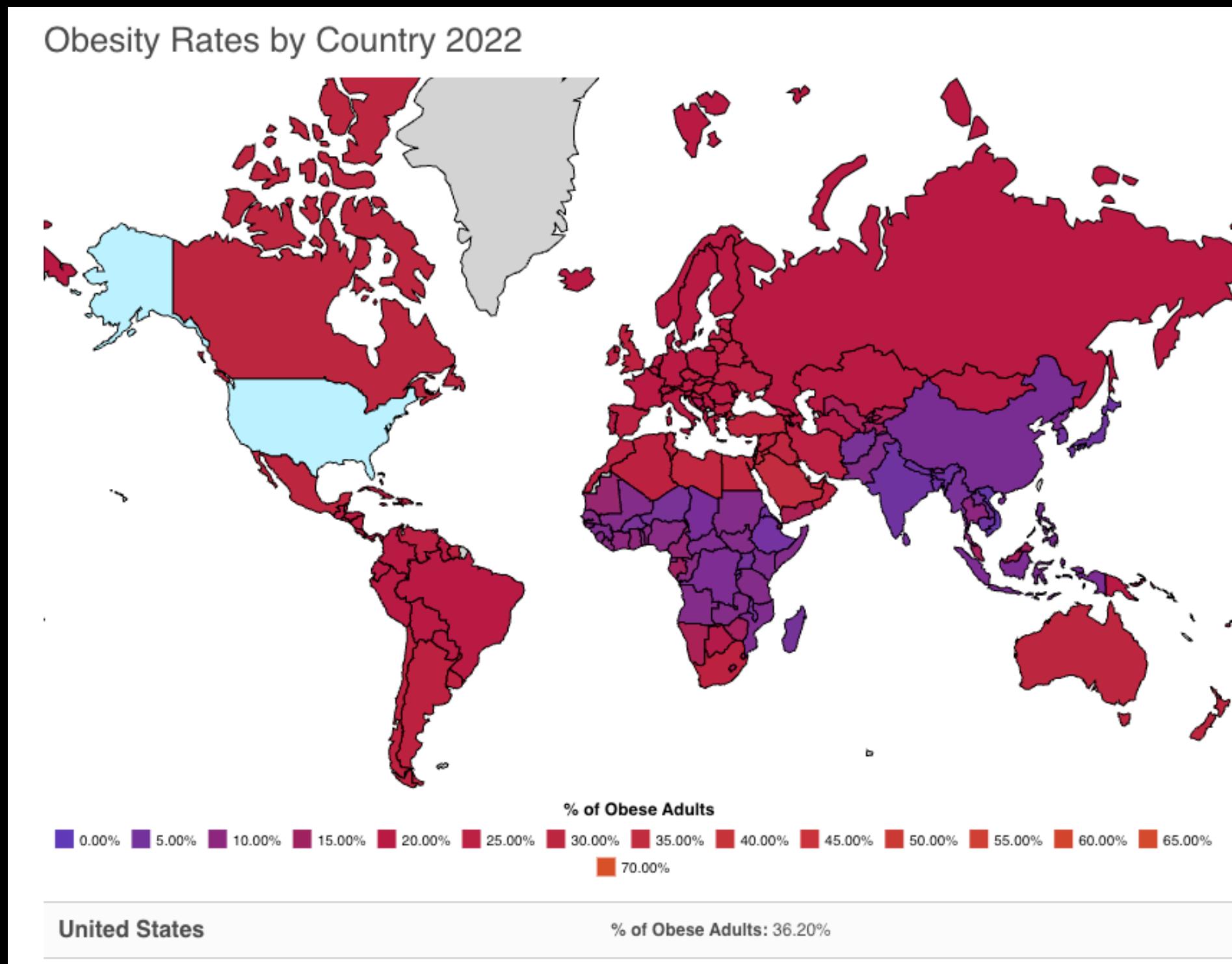


Citrus extract, paprika extract

Why Nutrify?

(almost everywhere)

Obesity is on the rise



Source: [World Population Review](#)

Direct medical costs of obesity x +

pubmed.ncbi.nlm.nih.gov/33470881/

Abstract

Full text links

SIGNIFICANTLY WITH CLASS OF OBESITY, FROM 88.4% FOR CLASS I TO 255.0% FOR CLASS III. THE effects of obesity raised costs in every category of care: inpatient, outpatient, and prescription drugs. Increases in medical expenditures due to obesity were higher for adults covered by public health insurance programs (\$2,868) than for those having private health insurance (\$2,058). In 2016, the aggregate medical cost due to obesity among adults in the United States was \$260.6 billion. The increase in individual-level expenditures due to obesity varied considerably by state (e.g., 24.0% in Florida, 66.4% in New York, and 104.9% in Texas). **CONCLUSIONS:** The 2-part models of instrumental variables, which estimate the causal effects of obesity on direct medical costs, showed that the effect of obesity is greater than suggested by previous studies, which estimated only correlations. Much of the aggregate national cost of obesity—\$260.6 billion—represents external costs, providing a rationale for interventions to prevent and reduce obesity. **DISCLOSURES:** Novo Nordisk financed the development of the study design, analysis, and interpretation of data, as well as writing support of the manuscript. Cawley, Biener, and Meyerhoefer received financial support from Novo Nordisk to conduct the research study on which this manuscript is based. Smolarz and Ramasamy

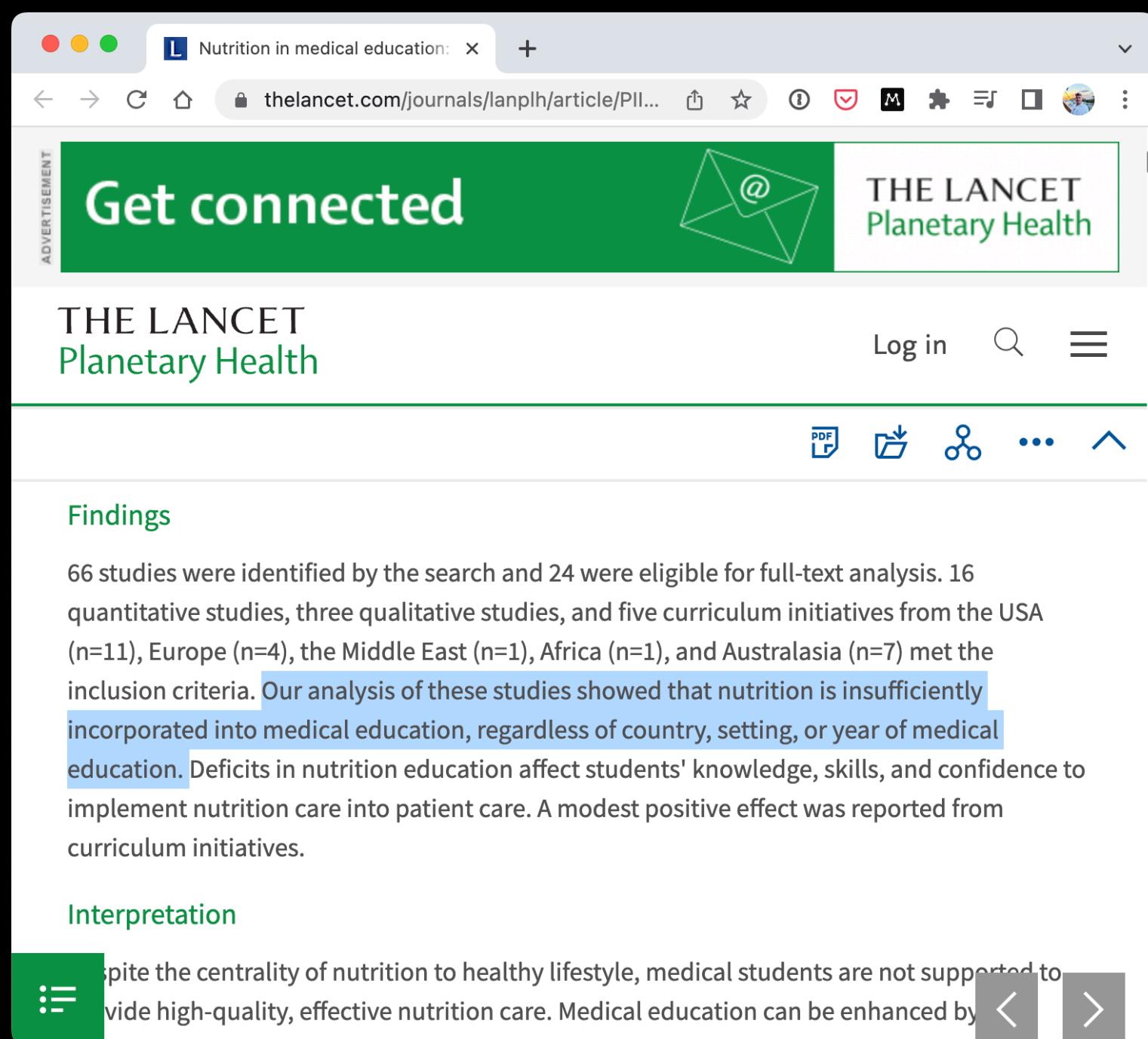


Source: [PubMed](#)

Why Nutrify?

Nutrition education is lacking  ?

(even in medical school)



Get connected

THE LANCET Planetary Health

Log in  

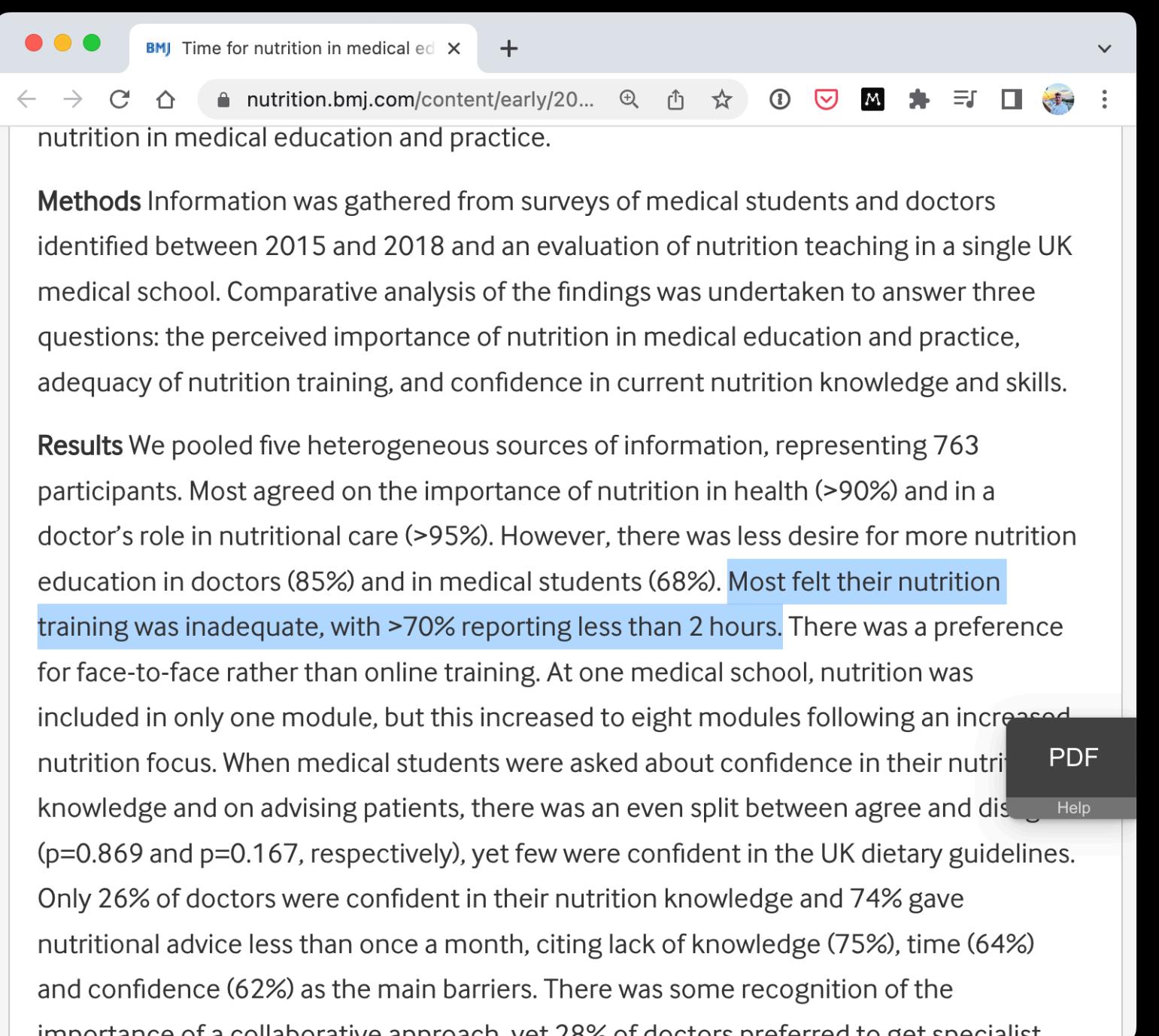
Findings

66 studies were identified by the search and 24 were eligible for full-text analysis. 16 quantitative studies, three qualitative studies, and five curriculum initiatives from the USA (n=11), Europe (n=4), the Middle East (n=1), Africa (n=1), and Australasia (n=7) met the inclusion criteria. Our analysis of these studies showed that nutrition is insufficiently incorporated into medical education, regardless of country, setting, or year of medical education. Deficits in nutrition education affect students' knowledge, skills, and confidence to implement nutrition care into patient care. A modest positive effect was reported from curriculum initiatives.

Interpretation

Despite the centrality of nutrition to healthy lifestyle, medical students are not supported to provide high-quality, effective nutrition care. Medical education can be enhanced by

Source: [The Lancet](#)

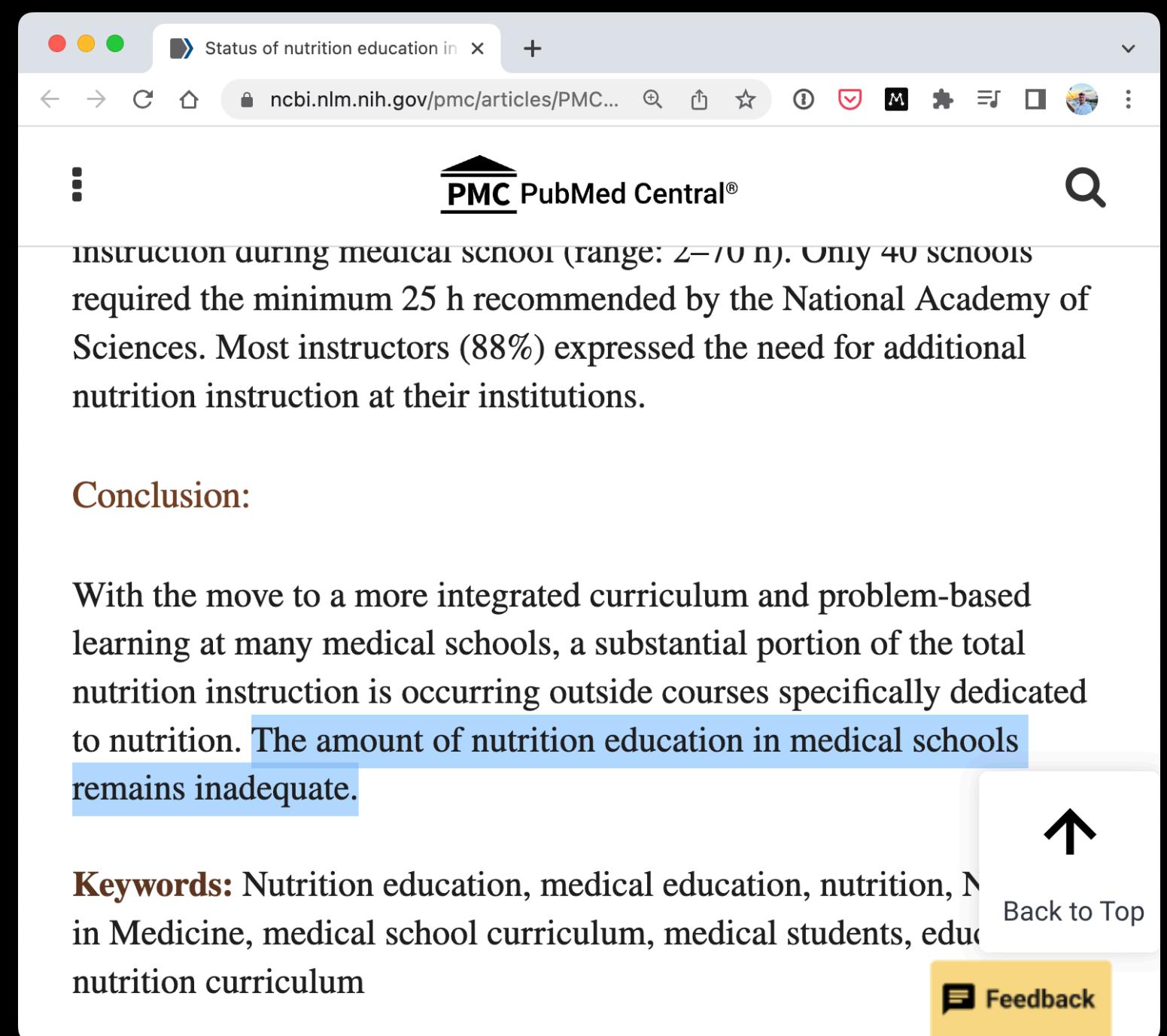


nutrition in medical education and practice.

Methods Information was gathered from surveys of medical students and doctors identified between 2015 and 2018 and an evaluation of nutrition teaching in a single UK medical school. Comparative analysis of the findings was undertaken to answer three questions: the perceived importance of nutrition in medical education and practice, adequacy of nutrition training, and confidence in current nutrition knowledge and skills.

Results We pooled five heterogeneous sources of information, representing 763 participants. Most agreed on the importance of nutrition in health (>90%) and in a doctor's role in nutritional care (>95%). However, there was less desire for more nutrition education in doctors (85%) and in medical students (68%). Most felt their nutrition training was inadequate, with >70% reporting less than 2 hours. There was a preference for face-to-face rather than online training. At one medical school, nutrition was included in only one module, but this increased to eight modules following an increased nutrition focus. When medical students were asked about confidence in their nutrition knowledge and on advising patients, there was an even split between agree and disagree (p=0.869 and p=0.167, respectively), yet few were confident in the UK dietary guidelines. Only 26% of doctors were confident in their nutrition knowledge and 74% gave nutritional advice less than once a month, citing lack of knowledge (75%), time (64%) and confidence (62%) as the main barriers. There was some recognition of the importance of a collaborative approach, yet 28% of doctors preferred to get specialist

Source: [BMJ \(British Medical Journal\)](#)



instruction during medical school (range: 2–70 h). Only 40 schools required the minimum 25 h recommended by the National Academy of Sciences. Most instructors (88%) expressed the need for additional nutrition instruction at their institutions.

Conclusion:

With the move to a more integrated curriculum and problem-based learning at many medical schools, a substantial portion of the total nutrition instruction is occurring outside courses specifically dedicated to nutrition. The amount of nutrition education in medical schools remains inadequate.

Keywords: Nutrition education, medical education, nutrition, N in Medicine, medical school curriculum, medical students, education, nutrition curriculum

  Back to Top

Source: [PubMed](#)

Who are we/why us?



Daniel Bourke

- Machine learning engineer/teacher, farmer, food/nutrition scientist
- 100,000+ ML students worldwide
- 125k+ subscribers on YouTube
- [Web](#), [YouTube](#), [GitHub](#), [Twitter](#)

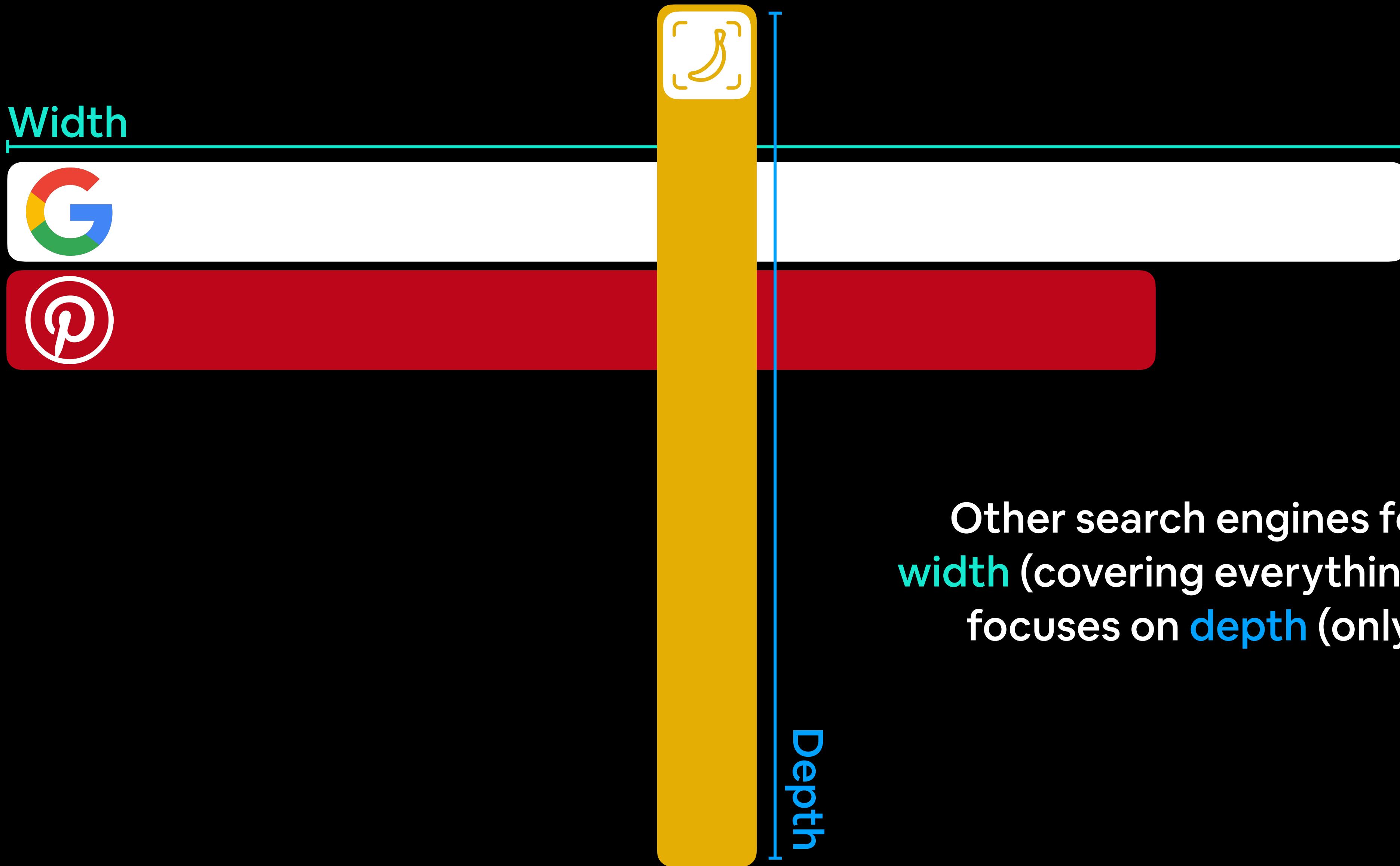


Joshua Bourke

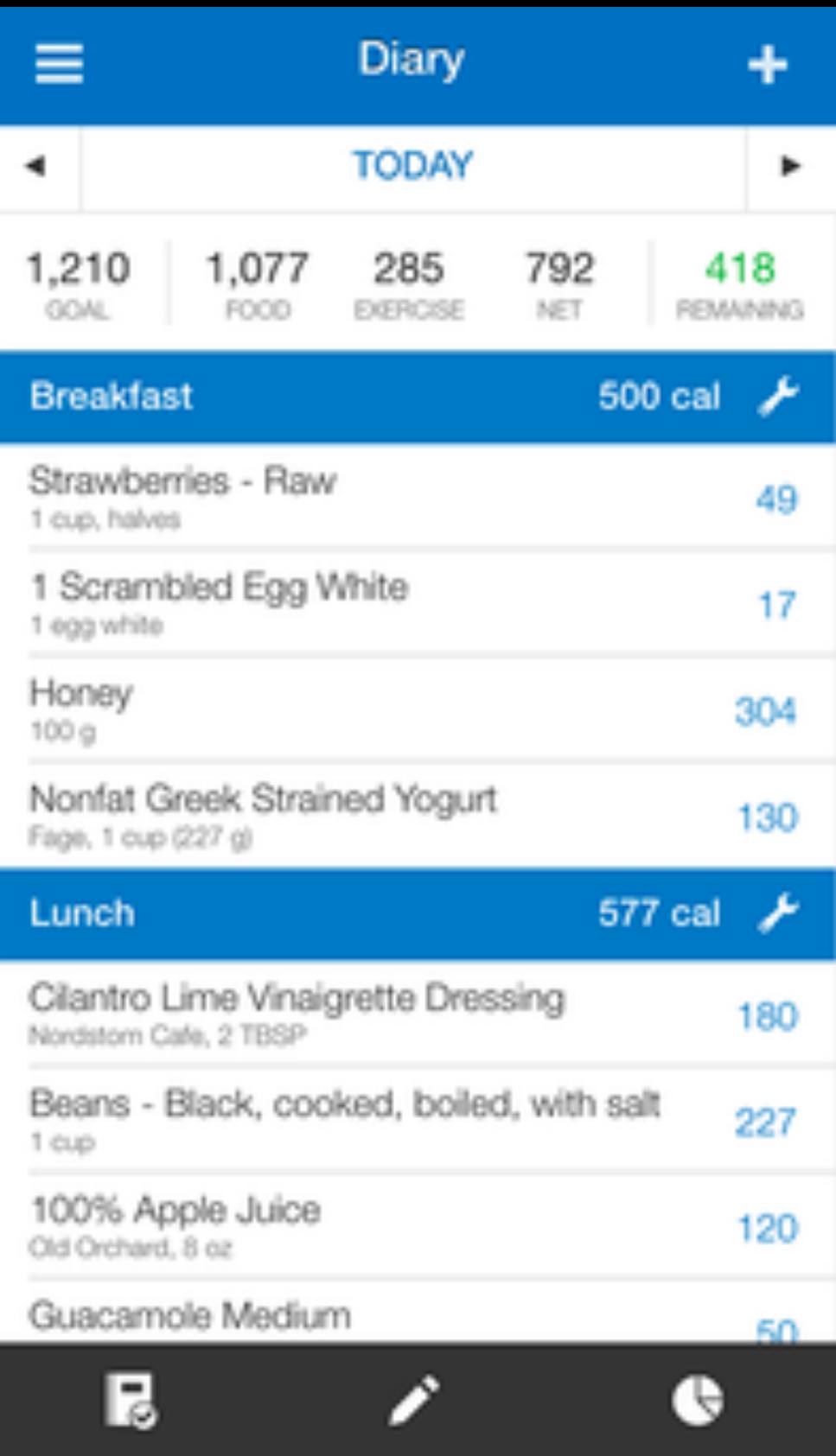
- iOS developer/lifeguard
- Founder of MyBJJ app
- [LinkedIn](#), [Instagram](#)

Founder intro video: <https://youtu.be/-8PGq4SP9E8>

Competition



Competition



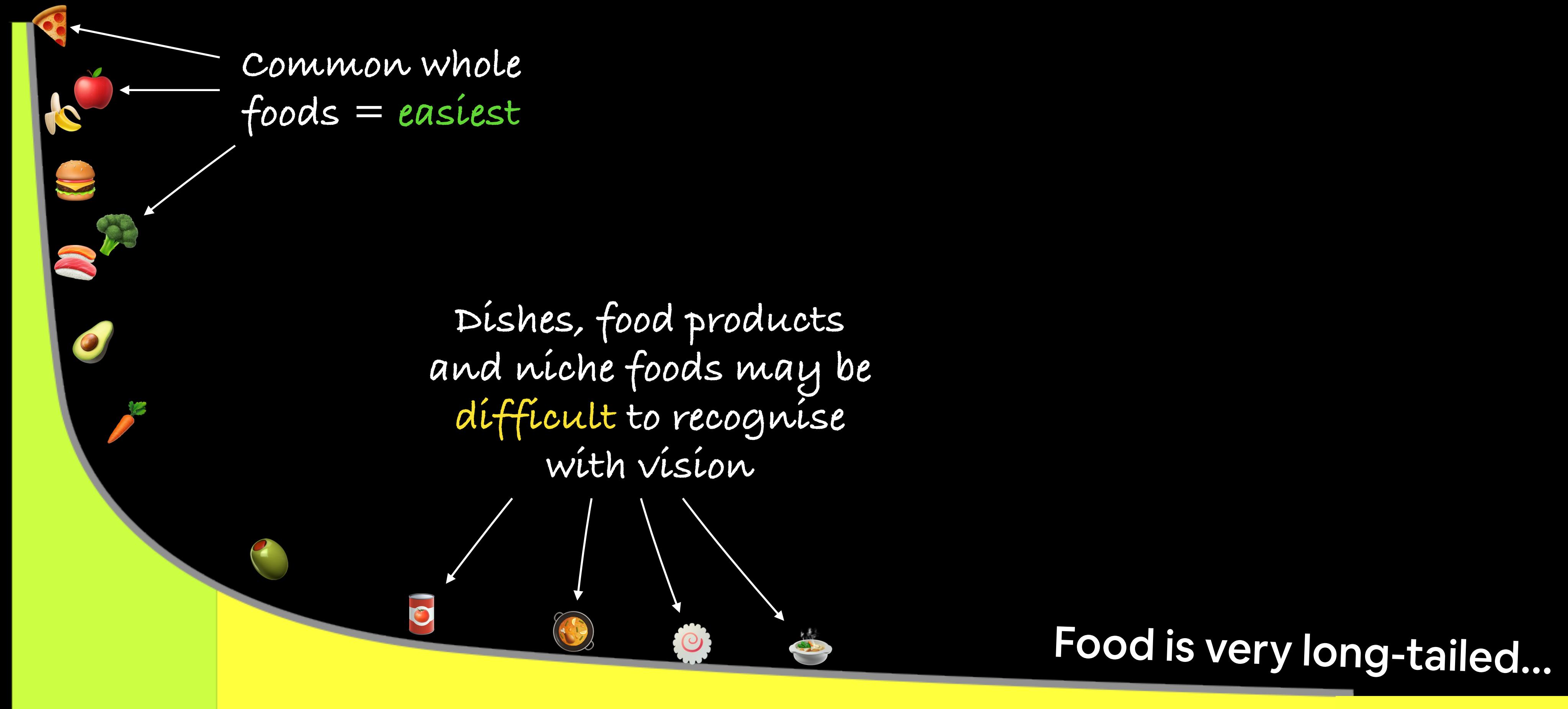
Tracking/diary



Nutrify: interactive/educative

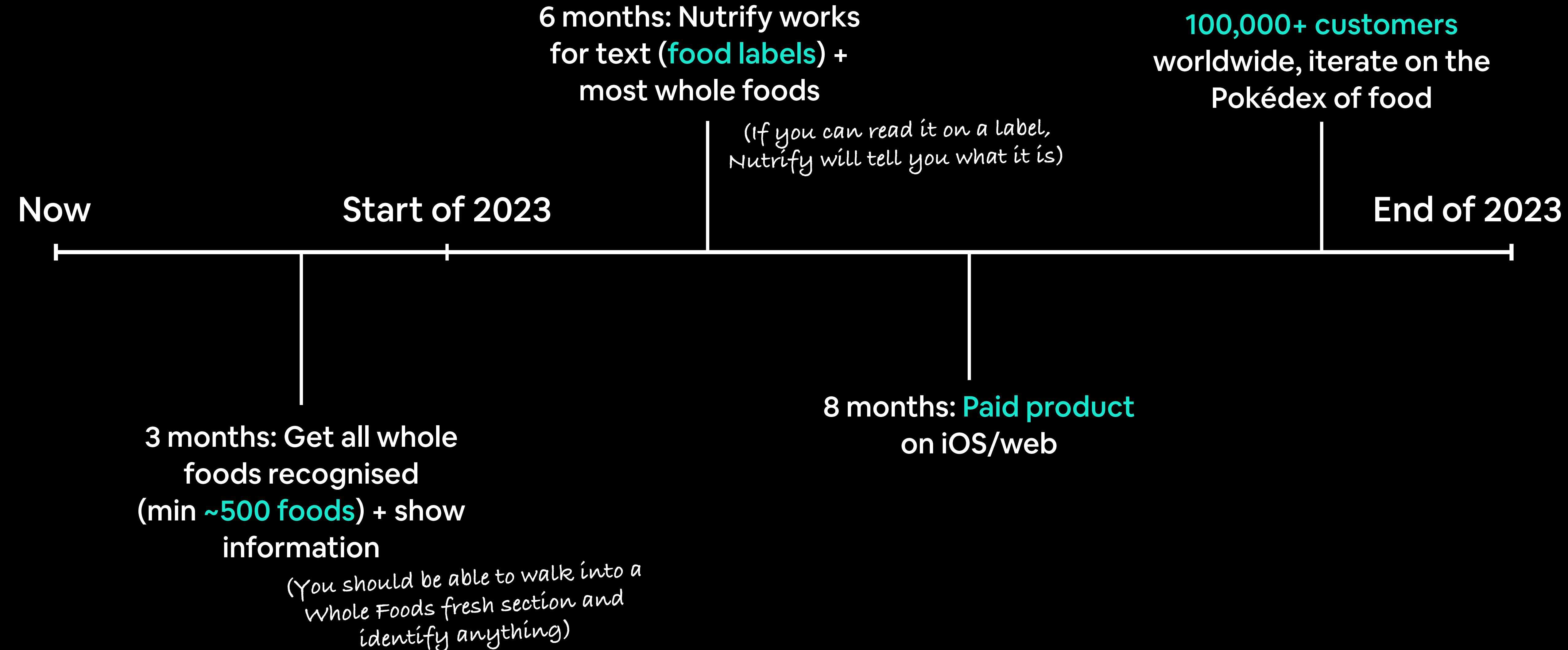


Roadblocks



Solution(s): Vision-language models + generative models for rare samples

Roadmap



What we'll do with the funds

- **\$250k cash** — Work on Nutrify full-time for at least a year (fast progress), pay ourselves ~\$75k/year each, plenty to spare for unseen circumstances.
- **\$250k Azure credits** — Most to GPU compute (8x A100 GPUs for a year on Azure is ~\$110k). Though I'd like to see how far we can go with just specialising pretrained models. Hosting will be almost free due to most of compute happening on device (network latency doesn't make for a fun time).
- **\$10,000 in human-labelling credits from Scale.ai** — I (Daniel) have a feeling that most of the labelling will be done by large vision-language models (or self-supervised) but we'll use these credits for creating gold-standard ground truths to compare auto-labels to.

Contact

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Joshua Bourke — joshbourkeis@gmail.com

<https://nutrifyaigrantapplication.com>