Can we starve cancer?

The Science of Intermittent Fasting and Cancer Prevention

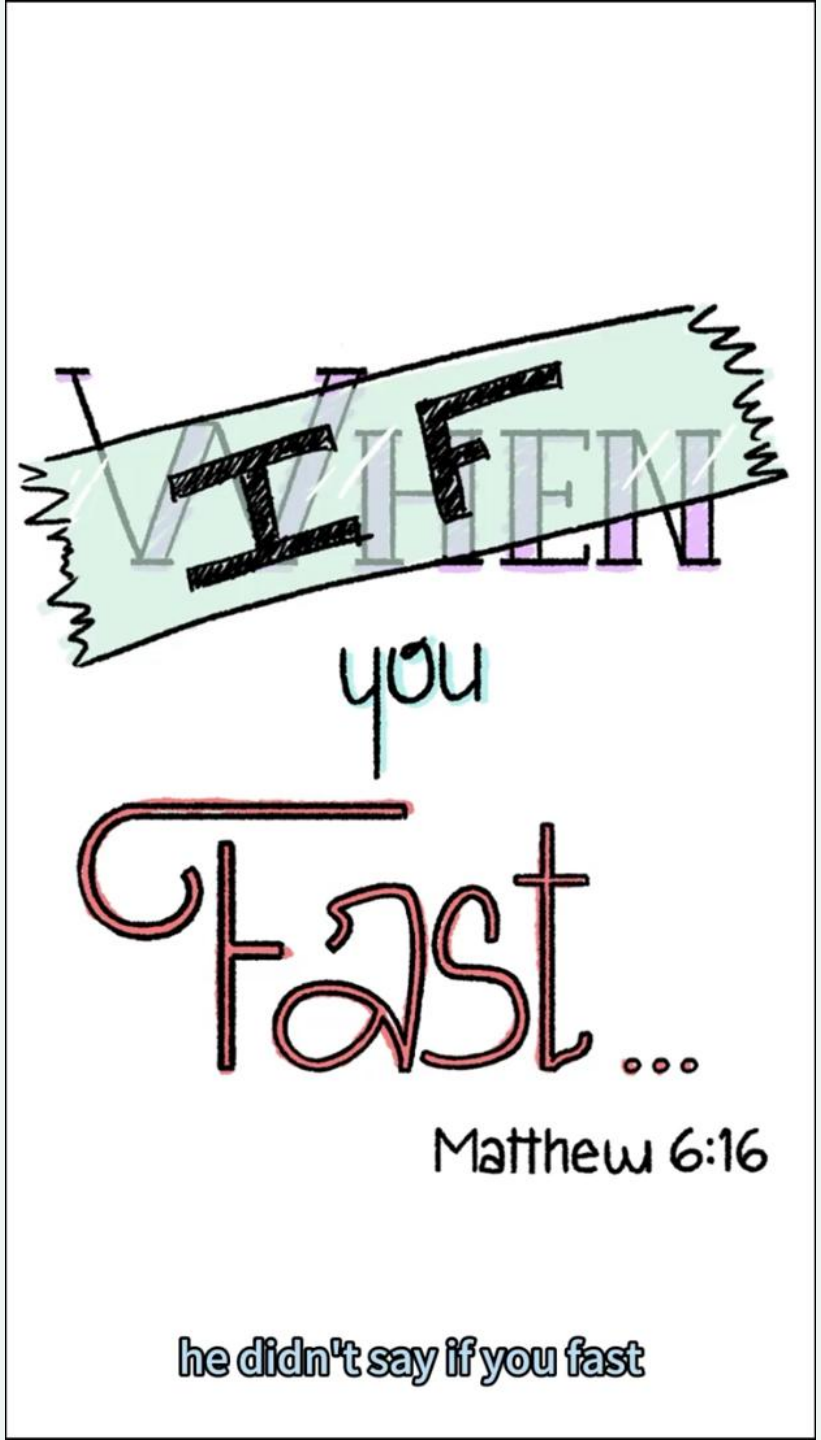
reporter：XX

汇报人：小稻壳

Introduction

ancient religious rituals

popular dietary trends



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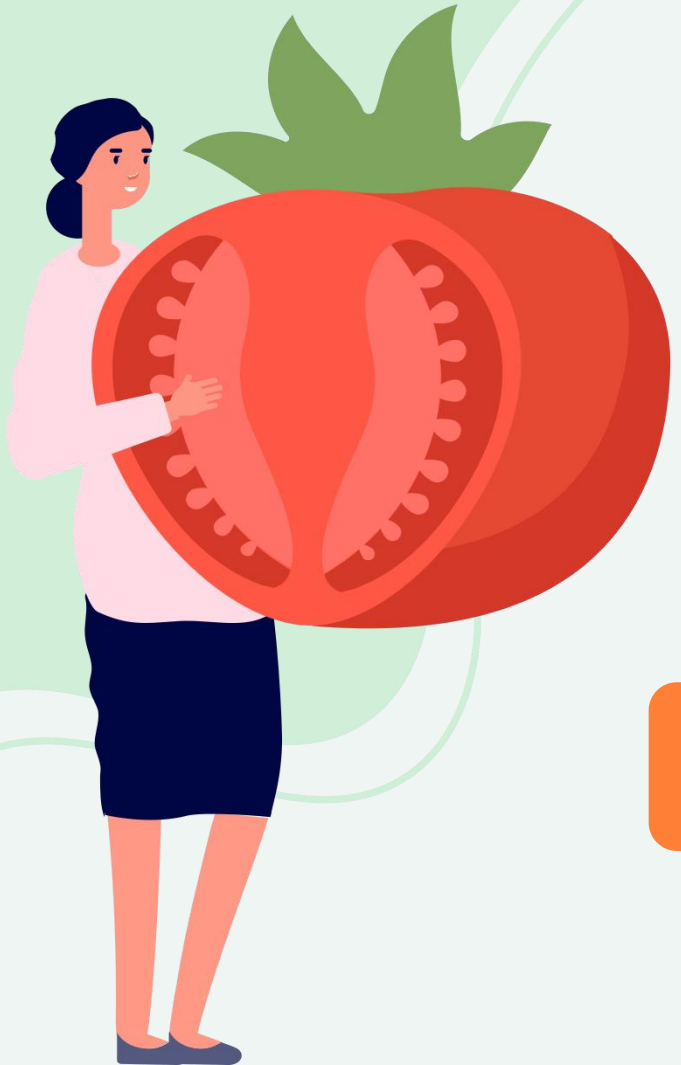
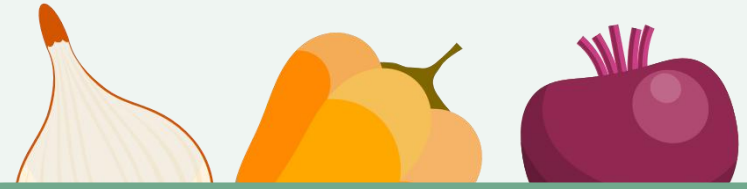
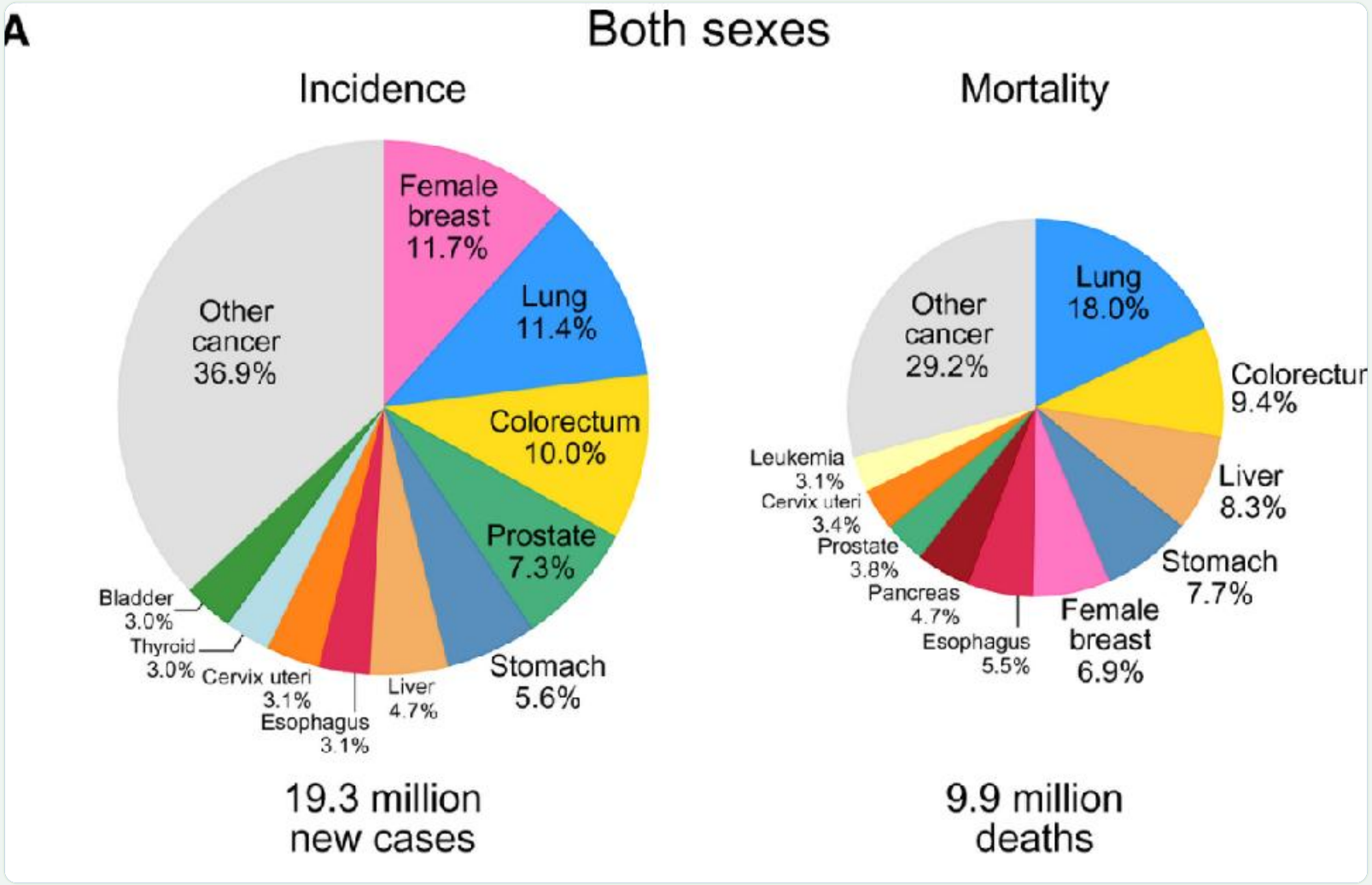




01

Why Intermittent Fasting Matters in Cancer Prevention

Cancer is currently the **second** leading cause of death globally, responsible for more than **19 million** new cases and **over 10 million** deaths annually.



Prevention strategies

dietary quality

Consume more high-fiber foods (vegetables, fruits, whole grains, legumes) and colorful fruits/vegetables for vitamins, minerals, and antioxidants; reduce red and processed meat intake; limit high-sugar, high-fat, high-salt foods and alcohol

exercise

Engage in at least 150 minutes of moderate-intensity (e.g., brisk walking, swimming) or 75 minutes of vigorous-intensity aerobic exercise weekly, combined with strength training (dumbbells, push-ups, etc.) to build muscle and boost basal metabolism.

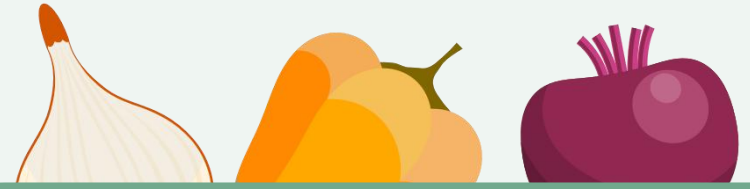
lifestyle factors

Quit smoking (a major cause of lung, bladder, and pancreatic cancer); avoid excessive sun exposure during peak UV hours, using sun protection (umbrellas, hats, sunscreen); maintain a healthy BMI (18.5–23.9 kg/m^2) through diet and exercise.

Different types of fasting

Intermittent fasting is not about dramatically changing what you eat, but about altering when you eat by cycling between eating periods and fasting periods.

Type of Intermittent Fasting	Description
Alternate-day fasting	Fasting every other day (e.g., fasting on odd/even days or specific days).
Time-restricted eating	Consuming all meals within a designated 8-hour window each day (e.g., 12 PM–8 PM).
Periodic fasting	Incorporating 1–2 full fasting days per week (e.g., fasting on Mondays and Thursdays).



02

Biological Mechanisms Linking Intermittent Fasting to Cancer Reduction

biological effects

lowering levels of hormones

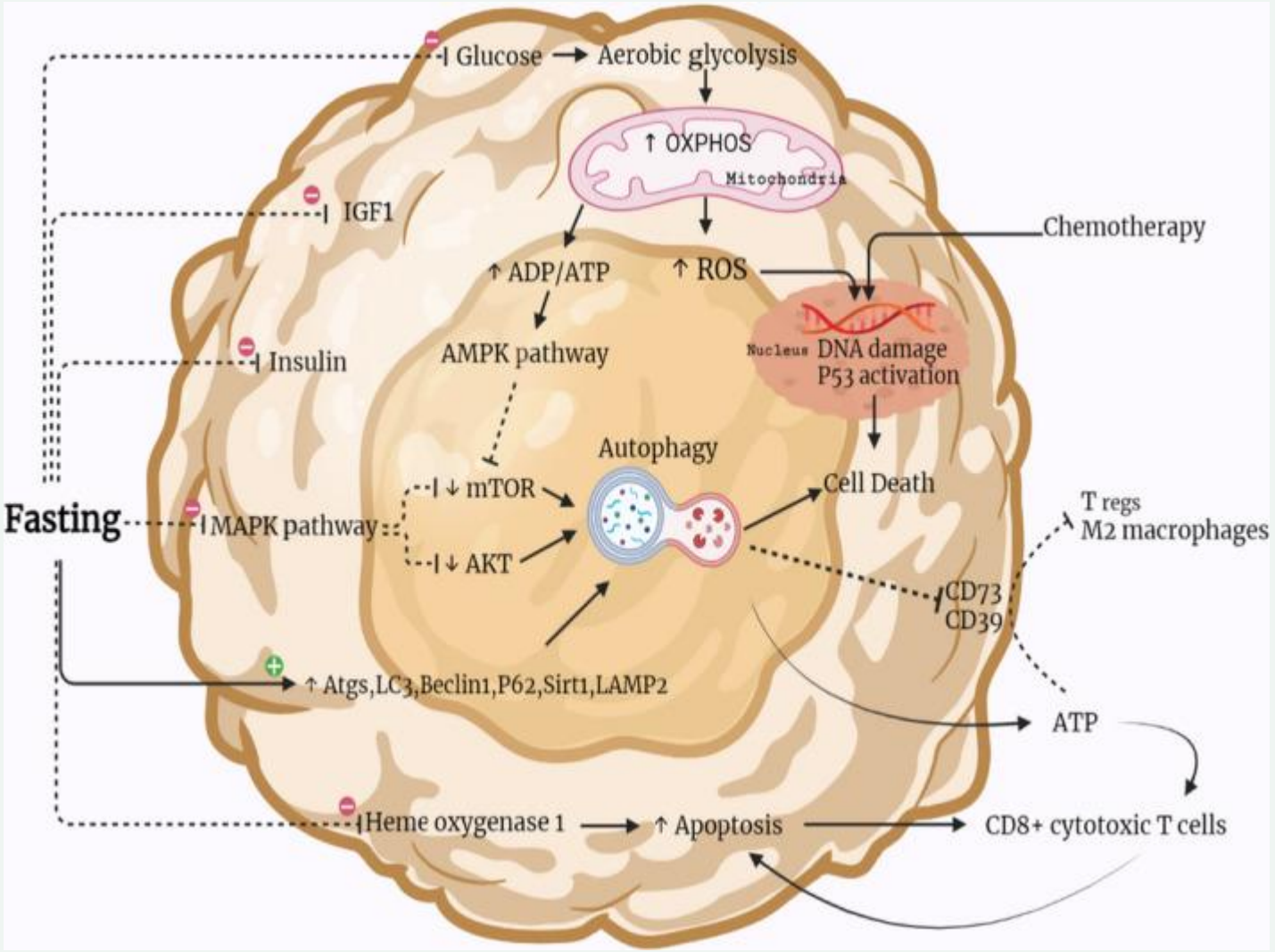
IGF-1

Insulin

create a less favorable environment for tumor growth

inflammation and oxidative stress

DNA damage and cancer initiation



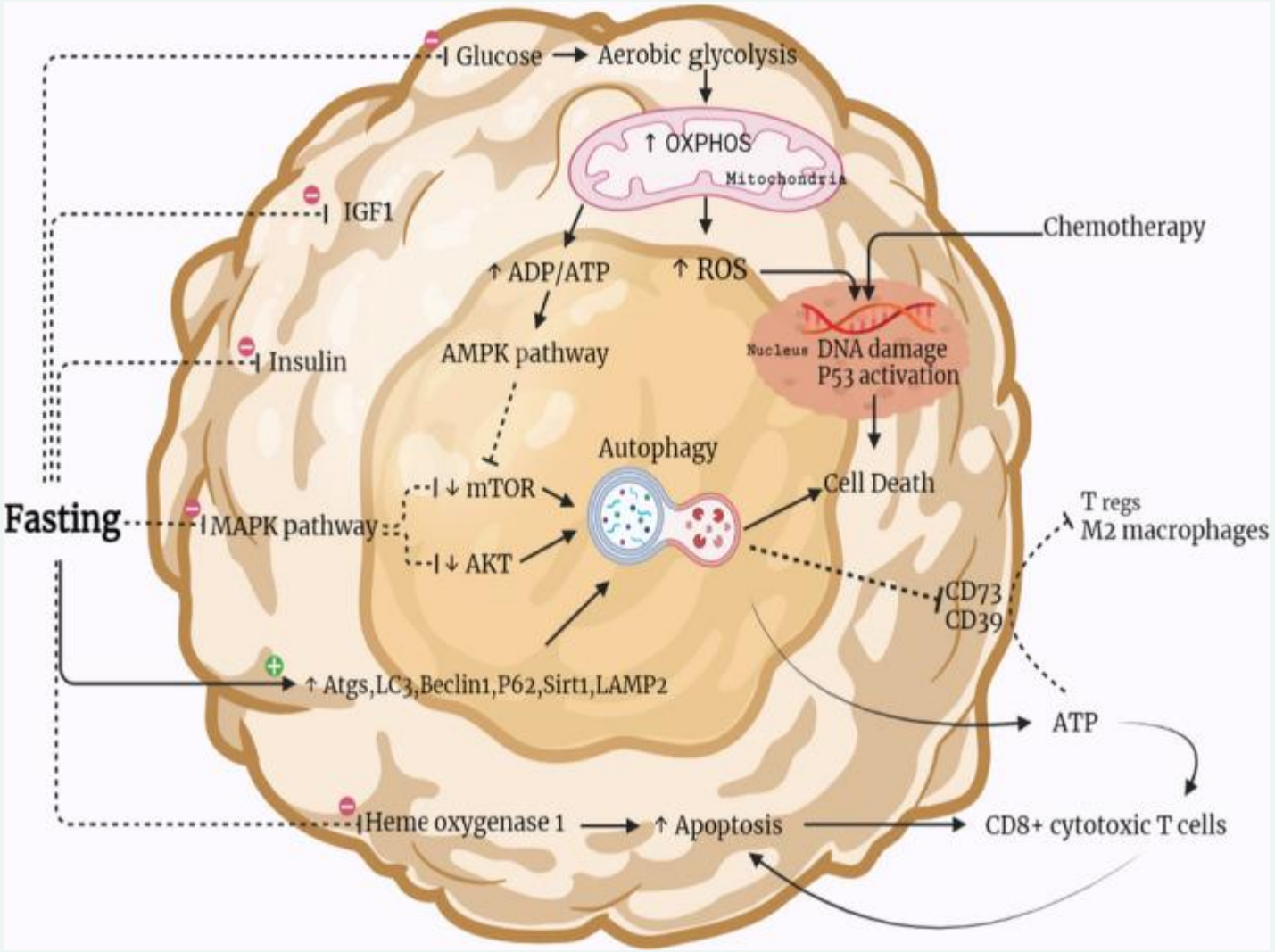
biological effects

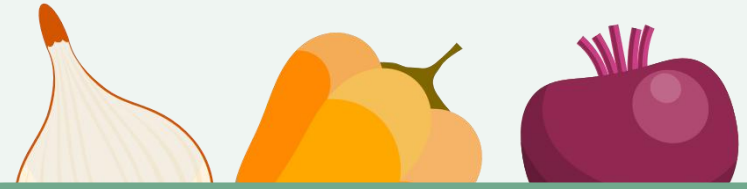
autophagy

clear damaged components and maintain cellular health

DNA repair mechanisms

protecting cells from potential malignant transformations

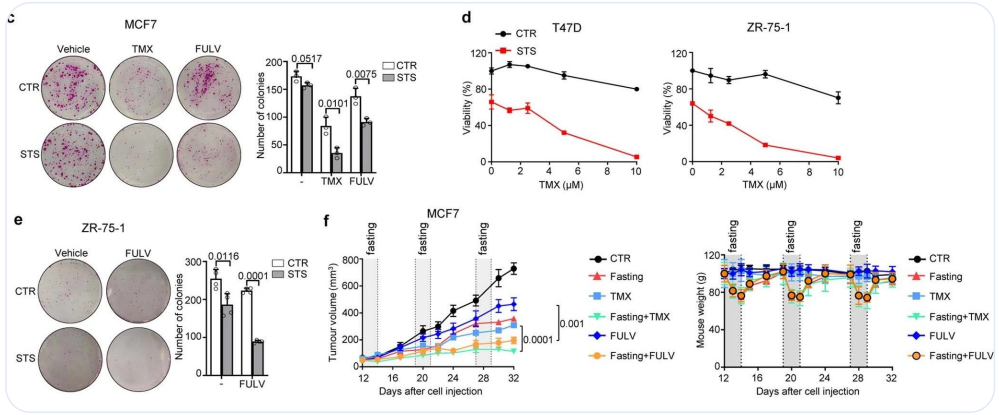


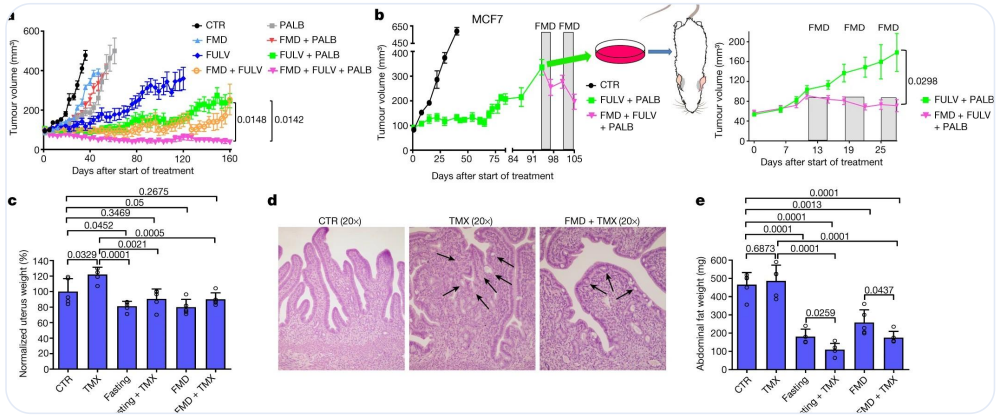


03

Evaluating Evidence from Animal and Human Studies

Correlative animal studies





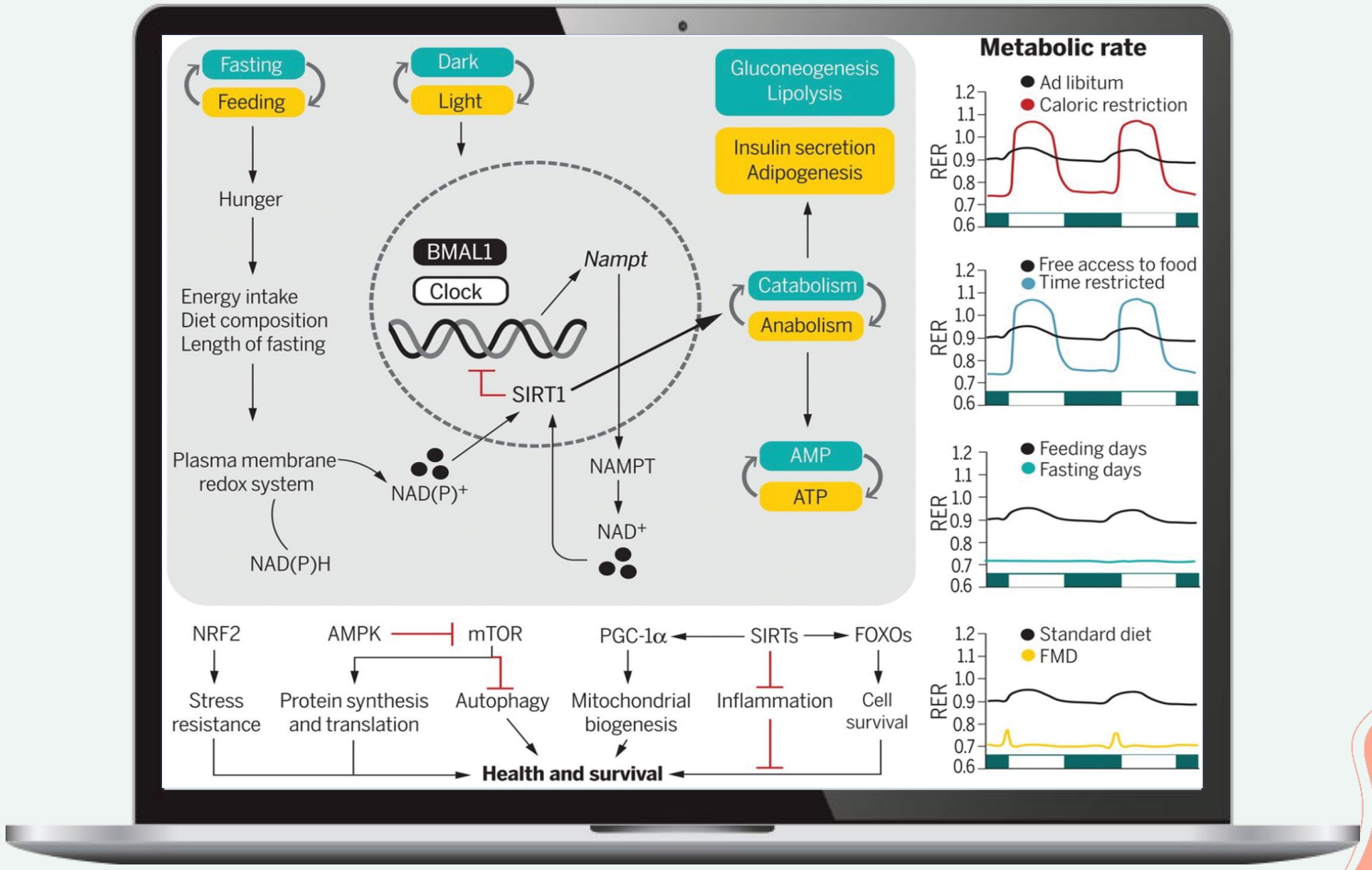
Research in rodents

Mice given a fasting-mimicking diet combined with hormone therapy exhibited significant reductions in breast cancer growth.

These fasting interventions not only slowed tumor progression but also increased the sensitivity of cancer cells to chemotherapy, while simultaneously reducing toxic effects on healthy cells.

How about human studies?

In cancer patients, IF shows benefits such as improved **insulin sensitivity**, **reduced inflammation** markers, and enhanced **tolerance to chemotherapy**, potentially improving quality of life during treatment.



04

Challenges and Future Directions for Intermittent Fasting Research

Limitations and Potential Drawbacks

Evidentiary Limitations

Currently, the majority of robust evidence is derived from animal studies, and the results of these studies may not be completely applicable to human biology.

Population Applicability

It is not universally appropriate for all individuals. Those with malnutrition, frailty, or cancer-related weight loss should steer clear of it to avoid potential harm.

Individual Variability

The effectiveness can vary depending on cancer type, genetic factors, and metabolic profiles, which makes personalized recommendations necessary.

Conclusion

In summary,intermittent fasting offers exciting possibilities for cancer prevention and therapy——but it’ s not a miracle cure

"starving" cancer by merely adjusting meal timing is both scientifically intriguing and practically appealing.