# Article information:

Fasting: From Physiology to Pathology - Tang - Advanced Science - Wiley Online Library  
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# Article summary:

1. Overnutrition is a major risk factor for various human diseases, and fasting has emerged as a potential dietary intervention to combat it.

2. Fasting can slow aging and protect against neurodegenerative diseases, metabolic disorders, and cancers by inducing adaptive changes such as reducing basal metabolic rates, inducing lipolysis and ketogenesis, modulating hormone concentrations, and decreasing oxidative stress and inflammation.

3. There are three representative patterns of fasting regimens: time-restricted feeding (TRF), intermittent fasting (IF), and fasting-mimicking diet (FMD), each with their own physiological roles and underlying mechanisms. TRF aligns the fasting-feeding cycle with the circadian system, IF interacts with ncRNA to regulate hepatic glucose and lipid metabolism, while FMD links with regeneration and differentiation of multiple tissues and cells.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article "Fasting: From Physiology to Pathology" provides a comprehensive overview of the potential benefits of fasting as a dietary intervention for combating overnutrition and preventing various human diseases. The authors summarize recent animal and human studies concerning the role and underlying mechanism of fasting in physiology and pathology, highlighting its therapeutic potential while discussing the combination of pharmacological intervention and fasting as a new treatment regimen for human diseases.

Overall, the article presents a balanced view of the potential benefits of fasting, supported by numerous preclinical and clinical studies. The authors provide an overview of three representative patterns of fasting regimens, namely time-restricted feeding (TRF), intermittent fasting (IF), and fasting-mimicking diet (FMD), outlining their physiological roles and underlying mechanisms.

However, there are some potential biases in the article that should be noted. Firstly, while the authors acknowledge that calorie restriction (CR) is another major category of dietary strategies for counteracting overnutrition, they focus primarily on fasting as an unconventional approach. This may lead readers to overlook the potential benefits of CR or assume that it is less effective than fasting.

Secondly, while the authors provide a comprehensive overview of the physiological roles and underlying mechanisms of TRF, IF, and FMD, they do not explore any potential risks or side effects associated with these interventions. For example, prolonged periods of fasting may lead to nutrient deficiencies or dehydration in some individuals.

Thirdly, while the authors highlight the potential benefits of combining pharmacological intervention with fasting as a new treatment regimen for human diseases, they do not explore any potential risks or side effects associated with this approach. For example, combining certain medications with prolonged periods of fasting may lead to adverse drug reactions or interactions.

Finally, while the authors present evidence supporting the beneficial effects of fasting on delaying aging and protecting against various human diseases such as neurodegenerative diseases, metabolic disorders, and cancers; they do not explore any counterarguments or conflicting evidence that may challenge these claims.

In conclusion, "Fasting: From Physiology to Pathology" provides a timely review summarizing recent animal and human studies concerning the role and underlying mechanism of fasting in physiology and pathology. While there are some potential biases in the article that should be noted regarding CR versus fasting approaches or possible risks associated with combining pharmacological intervention with fasting; overall it presents a balanced view highlighting both therapeutic potentials as well as challenges associated with this approach.

# Topics for further research:

* Risks and side effects of prolonged fasting
* Comparison of calorie restriction and fasting as dietary interventions
* Nutrient deficiencies and dehydration associated with fasting
* Adverse drug reactions and interactions with fasting
* Conflicting evidence on the benefits of fasting for aging and disease prevention
* Safety considerations for combining pharmacological intervention with fasting

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