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# MEDICAL REFLECTION: THE URGENCY OF FASTING THERAPY

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***Abstract:***

*Fasting, traditionally defined as refraining from consuming food and drink for a set duration, has been acknowledged not only as a religious or cultural practice but also as a scientifically valuable approach to promoting health. In contemporary medicine, fasting has gained significant attention due to its influence on metabolism, the immune system, and hormonal balance. Research indicates that structured fasting can enhance cellular performance via autophagy, a biological process that eliminates damaged or unnecessary cellular components, contributing to the prevention of degenerative diseases. Metabolically, fasting proves effective in regulating blood sugar levels, lowering LDL cholesterol, and increasing insulin sensitivity, thereby offering promising prospects for the prevention and management of metabolic diseases. The role of fasting in modern healthcare extends beyond physical health benefits to include systemic regulation that helps prevent chronic conditions. However, the application of fasting protocols should be customized to individual needs, particularly for specific groups such as individuals with preexisting medical conditions, pregnant women, and children.*

***Keywords:*** *fasting therapy, metabolic health, non-pharmacological therapy, autophagy, preventive medicine.*

## INTRODUCTION

Fasting is an age-old practice embedded in countless religious, social, and cultural traditions across the globe. In religious contexts, fasting often symbolizes worship and self-restraint while fostering social awareness and spiritual connections. However, beyond its profound spiritual value, fasting also serves as a discipline with notable physical and mental health benefits. Advances in scientific research have expanded the understanding of fasting from a ritualistic act to a systematic practice underpinned by biological and medical principles (Amiruddin, Oktavia, & Hidayat, 2023).

In comparison to other physiological interventions, fasting has recently received a lot of attention due to its significant implications for various aspects of health. Studies confirm that fasting can induce meaningful metabolic adaptations, such as enhanced insulin sensitivity (Faradhita, Handayani, & Kusumastuty, 2014), improved lipid profiles (Triliana & Airlangga, 2018), reductions in oxidative stress levels (Ginting, 2020), and activation of autophagy—a natural cellular repair mechanism that removes damaged

components (Harahap, Irfannuddin, & Murti, 2018). Furthermore, fasting has an impact on the nervous system and mental health. Research shows that BDNF (Brain-Derived Neurotrophic Factor) levels increase during fasting. BDNF is a protein vital for neuronal repair and growth. Better cognitive function, improved concentration and focus, and a reduced risk of neurodegenerative disorders like Alzheimer's and Parkinson's diseases are all linked to this increase. (Shelley, 2018).

Beyond physical benefits, fasting also promotes emotional well-being. By regulating dietary patterns and energy intake timing, fasting balances hormones such as serotonin, dopamine, and cortisol—key regulators of mood and stress. Clinical studies have observed improvements in emotional states during fasting, including reduced anxiety levels, enhanced calmness, and better sleep quality. Furthermore, the discipline required for sustained fasting fosters mental resilience and better psychological health overall. Nevertheless, these effects vary depending on factors such as the individual's health status, the duration of fasting, and the body's metabolic response during periods without food (Mangestuti, Aziz, & Ahamed, 2025).

Various forms of fasting protocols have been developed and studied in the scientific literature. Some of these include intermittent fasting (IF), which includes alternate-day fasting (ADF) and time-restricted eating (TRE), long-term caloric restriction, and structured, medically supervised therapeutic fasting. Each of these methods has a different duration, frequency, and degree of restriction, resulting in varying physiological and clinical effects. For example, time-restricted eating focuses on restricting eating within a 6–10-hour window per day, while alternate-day fasting involves alternating between normal eating days and fasting days with low energy intake (Harianto, 2021).

The urgency of studying fasting in the medical field is further strengthened by scientific evidence demonstrating its benefits in the prevention and management of various chronic diseases such as obesity, type 2 diabetes mellitus, hypertension, and dyslipidemia, as well as its potential protective effects on brain and mental health. Furthermore, fasting also contributes to increasing endurance, improving hormonal balance, and slowing the biological and mental aging process. However, the medical application of fasting must be tailored to each individual's physiological and psychological condition. Aspects such as age, nutritional status, physical activity, medical history, and mental health need to be considered to prevent unwanted side effects (Anwar, 2025).

With the right approach and professional supervision, fasting has the potential to be an effective, economical, and easily implemented non-pharmacological strategy for maintaining physical health while balancing mental health. Furthermore, fasting can serve as a preventative and rehabilitative measure for various metabolic and psychological disorders, improving quality of life, and extending life expectancy. Therefore, it is important to continue studying and understanding the scientific mechanisms behind the benefits of fasting, not only from a metabolic perspective but also from a neuropsychological

perspective, so that it can be more broadly integrated into modern health practices and the lifestyles of today's society (Anwar, 2025).

## RESEARCH METHOD

This study uses a qualitative method with a reflective literature study approach and a library research design with reflective-critical analysis to examine and reflect on the urgency of fasting therapy from a medical perspective based on scientific studies, health theories, and previous research findings. The research population includes all scientific literature discussing fasting therapy and its relation to medical health, including national and international journals, medical textbooks, and relevant scientific publications, with the sample consisting of selected scientific articles that discuss the effects of fasting therapy on metabolic health, inflammation, and other body systems, chosen purposively in accordance with the research objectives. Data collection was carried out through documentation studies by compiling scientific journals, books, and relevant medical publications, exploring scientific databases such as Google Scholar, PubMed, and ScienceDirect, as well as recording and coding important findings related to fasting therapy and its medical benefits. Furthermore, the data were analysed using content analysis with a reflective approach through stages of source selection, theme grouping, meaning interpretation, and conclusion drawing to explain the urgency of fasting therapy from a medical perspective.

## FINDINGS AND DISCUSSION

Fasting is not only a spiritual activity but also has significant physiological and medical impacts. Various studies have shown that fasting practices, both religious and therapeutic, can affect the metabolic system, cellular function, mental health, and prevent chronic diseases. However, these benefits depend on the type of fast, duration, frequency, and the health condition of the individual. Furthermore, fasting can improve insulin sensitivity, maintain blood pressure balance, and reduce the risk of metabolic diseases such as diabetes and obesity (Ratnasari et al., 2022) (M. I. Azizah, Rosyana, Amiruddin, & Maulidha, 2025). Thus, fasting not only enriches one's spiritual aspects but also provides tangible benefits for physical health and overall body balance (Anwar, 2025).

### Biological and Metabolic Mechanisms During Fasting

During fasting, the body transitions from using glucose as its primary energy source to utilizing fat through the process of ketogenesis. This shift lowers blood glucose and insulin levels and increases insulin sensitivity in peripheral tissues. Furthermore, fasting activates autophagy, the body's natural process of clearing damaged cells and replacing them with new ones. This activity helps slow cellular aging, increase energy efficiency, and maintain vital organ function. Increased levels of the hormone BDNF (Brain-Derived Neurotrophic Factor) during fasting also contribute to maintaining brain health, improving learning ability, and protecting neurons from oxidative damage. Thus, fasting can be seen as a biological stimulus that improves overall body homeostasis (L. Azizah & Yazid, 2025).

**Benefits of Fasting for Metabolic and Cardiovascular Diseases**

Various scientific studies have shown that fasting, particularly intermittent fasting and time-restricted eating, has positive effects on metabolic health. Fasting promotes weight loss, reduces body fat, improves lipid profiles (lowers LDL cholesterol and triglyceride levels), and increases HDL cholesterol levels. Furthermore, the increased insulin sensitivity caused by fasting plays a key role in preventing type 2 diabetes mellitus.

Fasting offers significant contributions to both mental and emotional well-being. The regulation of eating patterns and timing of energy intake directly influences hormonal balance, particularly hormones like serotonin, dopamine, and cortisol, which are integral in managing mood and stress levels. Clinical studies have demonstrated that individuals who engage in proper fasting methods often experience heightened calmness, reduced anxiety, and better sleep quality. Additionally, fasting fosters mental resilience by promoting self-control and discipline, thereby enhancing psychological health. Nevertheless, these outcomes can vary depending on the individual's health condition, the fasting duration, and their metabolic stability during food abstention (Mangestuti et al., 2025).

Diverse fasting protocols have been analyzed in scientific research, including popular approaches such as intermittent fasting (IF), alternate-day fasting (ADF), time-restricted eating (TRE), longer-term caloric restriction, and medically supervised therapeutic fasting. Each method varies in terms of timing, frequency, and restrictions, yielding distinct physiological and clinical effects. For instance, time-restricted eating confines food consumption to a 6–10-hour window daily, while alternate-day fasting alternates between normal eating days and days with very low energy intake (Harianto, 2021).

Scientific evidence increasingly underscores fasting's relevance in preventing and managing chronic conditions like obesity, type 2 diabetes mellitus, hypertension, and dyslipidemia. It has also shown potential neuroprotective benefits for mental health. Fasting improves hormonal balance, boosts immunity, and appears to slow down both biological and psychological aging processes. However, the implementation of fasting must be customized according to individual physiological and psychological needs. Factors such as age, nutrition levels, physical activity, medical history, and mental health are critical to ensure that fasting does not result in adverse effects (Anwar, 2025).

When approached appropriately under professional guidance, fasting can serve as an efficient, economical, and accessible non-pharmaceutical strategy for maintaining physical health while supporting mental balance. It may further act as a preventive or rehabilitative measure for various metabolic and psychological disorders, ultimately enhancing quality of life and extending longevity. Consequently, it is essential to deepen our scientific understanding of fasting—not only from a metabolic standpoint but also from a neuropsychological perspective—so it can be seamlessly integrated into contemporary healthcare practices and daily living (Amiruddin et al., 2023; Wulandari et al., 2025).

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**The Effects of Fasting on Mental Health and Cognitive Function**

Besides impacting metabolism, fasting also affects mental health and brain function. Several studies have shown that fasting can improve alertness, concentration, and mood stability. This is associated with reduced systemic inflammation, increased BDNF levels, and increased sensitivity of dopamine receptors in the brain. However, scientific evidence in humans is still mixed. Some studies report improved focus and cognitive performance, while others find no significant differences. Therefore, claims about the cognitive benefits of fasting should be interpreted with caution and require further research (Nuriyyah & Soleh, 2025).

**Picture 1.1**


**Picture 1.** The Effects of Fasting on Mental Health in Indonesia Language

**Risks and Side Effects to Be Aware of**

While fasting is generally safe, there are some risks if done without proper supervision. Potential side effects include dehydration, electrolyte imbalance, hypoglycema, and blood pressure fluctuations, especially in

individuals with chronic illnesses such as diabetes or heart disease. In some extreme cases, prolonged fasting can lead to refeeding syndrome, a serious metabolic disorder caused by the sudden influx of food after a long period of fasting. Therefore, it is important to consider an individual's physiological condition and undergo medical monitoring before implementing fasting as a therapy (Jaziroh, Wicaksono, Aufa, & Amiruddin, 2025).

**Clinical Considerations and Implementation digesGuidelines**

In a medical context, fasting should be implemented in a structured and individualized manner. Physicians or healthcare professionals need to assess the patient's nutritional status, comorbidities, and medications. Monitoring protocols include checking glucose, blood pressure, and electrolyte levels during the fasting period (Amiruddin, Fatimah, & Wulandari, 2024). Fasting improves metabolism in the stomach for most people. As for nausea and vomiting, these are not inherent effects of fasting, but rather the result of metabolic adaptation or poor eating habits. In fact, fasting is a natural preventive therapy for the digestive system if done in accordance with religious guidance and health principles. There is a common ground between piety and health, namely stomach control (Wulandari et al., 2025).

For high-risk populations, such as the elderly, those with kidney disease, or those with eating disorders, therapeutic fasting should only be performed under the supervision of a medical professional. International guidelines also emphasize the importance of a gradual refeeding process to avoid metabolic complications after the fasting period (Harianto, 2021)

**Research Directions and Medical Implications**

While numerous studies demonstrate the benefits of fasting, scientific gaps remain regarding the ideal duration, frequency, and long-term impacts on human health. Future research should focus on identifying populations that benefit most, the molecular mechanisms underlying the effects of fasting, and its long-term safety for vital organs. With increasingly strong scientific evidence, fasting has the potential to be an effective non-pharmacological strategy for maintaining metabolic health, improving quality of life, and reducing the risk of chronic disease when implemented with the right medical approach (Kunmiati, 2025).

## CONCLUSION

Fasting therapy is a health approach that is gaining increasing attention due to its significant benefits for the body and mind. The importance of fasting therapy lies in its ability to detoxify the body, boost metabolism, regulate blood sugar levels, and support cell regeneration. Furthermore, fasting therapy has been shown to contribute to improved mental and spiritual health through increased self-control and self-awareness.

In a medical context, various studies have shown that intermittent fasting and short-term total fasting can help prevent and manage various chronic diseases such as type 2 diabetes, obesity, hypertension, and cardiovascular disorders. Furthermore, fasting therapy must be carried out with proper

planning and supervision, especially for individuals with certain medical conditions. Thus, fasting therapy is not only a spiritual or cultural practice, but also an important and relevant preventive and curative health strategy in modern life.

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