

## Therapeutic Oral Supplementation of Active Magnesium: Immunotherapy Case Series Under The Yod-Ying Protocols

### Abstract

Magnesium is an essential mineral with ubiquitous roles within the human body ranging from being cofactor for hundreds of enzymes to assisting nervous and immune functions. Magnesium is evidently becoming more depleted in soils, thus making it deficient in most of the food chains. Magnesium supplementation becomes a necessary means of supplying this nutrient to the body of both the healthy and the ill. Forms of magnesium supplement and specific intake requirements play a crucial role in making it bioavailable. To implement immunotherapy protocols having effectively magnesium functioning in the body, patient's participation is important in helping to make medicine effective by following strictly the intake recommendations. This case series reported raised serum magnesium level after short duration of supplementation starting from 30 days of as low as a single capsule of active magnesium per day, with requirements of intake timings to assist magnesium ions being released, absorbed and utilized.

**Keywords:** Bioavailable Magnesium Supplementation; Serum Magnesium; Ubiquitous Roles of Magnesium; Immunotherapy; the Yod-Ying Protocols

**Abbreviations:** Mg: Magnesium; DNA: Deoxyribonucleic Acid; RNA: Ribonucleic Acid

### Introduction

Magnesium is considered an essence of life with its ubiquitous roles in a number of biochemical reactions. It is the 4th most abundant mineral in the human body, the 7th most common earth crust material, and the 8th most common element of the universe [1,2]. Mg functions in the human body span from assisting the synthesis of basic building blocks of DNA/RNA to protein synthesis, energy production, vital tissue functions and immune regulation [3,4]. However, Mg has become depleted in the soil of most land under industrialized modern farmings, thus making this mineral deficient in most of the food chains [5]. An agricultural study [6] conducted to evaluate Mg content in plant produce from 1940-1991 indicated that there was 24% reduction in vegetables, 16% in fruits and to even a shocking reduction of 75% in carrots in particular. Specifically in the US, wheats have 7-29% decrease in Mg from 1850's; and Mg content in vegetables from US & England were down by 15-23% from 1930's to 1980's [7]. Majority results from calcium-

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### Case Report

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treated soil, extensive uses of synthetic fertilizers lacking Mg and also continuous use of harsh pesticides [5]. Industrial food processing such as milling also contributes to the loss of Mg to a great extent [2].

A study conducted within American population reveals that nearly two-thirds of the population is not taking recommended daily allowance for Mg [8]. Since Mg in soils and most plant produce are so depleted, it renders Mg supplementation necessary in both the healthy and the ill alike. However, since Mg plays such a large number of biochemical reactions in the body, its deficiency even in severity usually does not have a single indicative effect [4]. It is not simply expressed as a clear sign, symptom or even a particular disease. On the other hand, Mg deficiency especially long-term often gives rise to series of ill health [9]. Magnesium supplementation becomes necessary in various conditions from migraines to cardiovascular diseases to immune-related disorders and even cancers [5].

Magnesium as an oral supplement comes in various chemical forms, from compounds like magnesium salts to magnesium amino acid chelates. Each form has its own strengths and weaknesses when it comes to absorption and bioavailability. This paper reports case series with raised serum magnesium after receiving oral active magnesium as part of the immunotherapy under the Yod-Ying Protocols for individual health conditions.

### Yod-Ying Protocols Requiring Magnesium

The Yod-Ying Protocols are known for its comprehensive functional integrative medicine approach to treat different health conditions from chronic degenerative diseases to immune-related disorders and cancers. Since Mg is considered an absolute essence for thousands of both known and not-yet-known biochemical reactions, any therapies under the Yod-

Ying Protocols cannot be successfully implemented without Mg. Most importantly, Mg holds importance under these protocols mainly to continuously and properly support cell signal transduction, enzymatic reactions, nerve impulse regulation, and immune modulation [5].

### Magnesium Supplementation under the Yod-Ying Protocols

The Yod-Ying Protocols utilize a specially laboratory-prepared active form of Mg which also requires a specific timing of intakes for its ions being released from the compound bonds. The pure magnesite and common magnesium salts are prepared under a specific temperature range, making the compound readily soluble in low pH and simply reactive with water. This form of Mg supplement provides its active ions released from the chemical bonds once in a proper low pH of the stomach's acid environment before any food ingestion. The patients are informed to take this oral Mg immediately upon rising for best results. Since the Yod-Ying Protocols are based largely on functional medical approach, comprehensive laboratory testings play an important role in determining doses and duration of supplementation. Although serum magnesium accounts for only less than 1% of the total magnesium pool in the body [10], this simple and inexpensive test can be indicative of various health conditions [11-15] and pre- & post- therapeutic outcomes as well as an indicator for dosage adjustment accordingly. In cases of indicative defects of magnesium metabolism, a urine test can be performed to assist in analyzing magnesium homeostasis.

### Case Series

We report altogether 12 cases undertaking immunotherapy under the Yod-Ying Protocols who were advised to take oral active Mg as the fundamental requirements of the treatment regimen. Different dosages of Mg supplement depends on the patients' individual laboratory test results, in this report ranging from 1-2 of the 257mg capsules per day, taken immediately upon rising on an empty stomach. To prevent further binding of magnesium ion with other anions, an at least 1 hour period is required before further intakes of foods, drinks or other supplements and medications.

Case series are divided into 3 groups of 3-6 patients in this paper, only in order to differentiate the dosage and duration of supplementation. Serum magnesium was evaluated on a monthly or bimonthly schedules, with normal reference range = 1.6-2.6 mg/dL. None of the cases reported any potential defects of magnesium metabolism or renal malfunctions as an indicator of defective magnesium homeostasis. Group A consisted of 3 patients receiving 1 capsule of active Mg per day for a period of 30 days (Case 1: a 60 year-old female, Case 2: a 55 year-old female, Case 3: a 60 year-old female). Group B consisted of 6 patients receiving 2 capsules of active Mg per day for a period of 30 days (Case 4: a 62 year-old female, Case 5: a 60 year-old female, Case 6: a 40 year-old female, Case 7: a 66 year-old female, Case 8: a 57 year-old female, Case 9: a 57 year-old female). Group C consisted of 3 patients receiving 2 capsules of

active Mg for a period of 60 days (Case 10: a 27 year-old male, Case 11: a 60 year-old male, Case 12: a 83 year-old male). As the treatment commenced, the patients followed the Yod-Ying Protocols while taking active Mg supplementation strictly as informed of dosage, timing of intake, absence of other intakes, and intake duration.

All cases reported raised serum magnesium after active magnesium supplementation from as short as 30 days and as little as 257mg x 1 capsule per day. There was a slightly increase in the value of serum magnesium when the supplementation increased in dosage (up to 257mg x 2 capsules) and duration (up to 60 days). Group A reported having raised serum magnesium of 0.2 mg/dL after 1 capsule/day for 30 days: from 1.9 to 2.1, from 2.5 to 2.7, from 2.4 to 2.6 for Case 1, Case 2, and Case 3 respectively (Table 1). Group B reported having raised serum magnesium of 0.2 mg/dL after 2 capsules/day for 30 days: from 2.3 to 2.5, from 2.4 to 2.6, from 2.2 to 2.4 for Case 4, Case 6, and Case 9 respectively (Table 2). Group B also reported having raised serum magnesium of 0.3 mg/dL after 2 capsules/day for 30 days: from 2.2 to 2.5, from 2.4 to 2.7 for Case 5 and Case 8 respectively; and of 0.4 mg/dL: from 2.4 to 2.8 for Case 7 (Table 2). Group C reported having raised serum magnesium of 0.3 mg/dL after 2 capsules/day for 60 days: from 2.4 to 2.7, from 2.1 to 2.4 for Case 10 and Case 11 respectively; and of 0.8 mg/dL: from 1.3 to 2.1 for Case 12 (Table 3). An average increase of serum magnesium values can be postulated at 0.3 mg/dL for the total 12 case reported herein (Data not shown). Figure 1 demonstrates an overall picture of an increase in serum magnesium after supplementation of active magnesium.

Serum Magnesium Values (mg/dL)	Case 1	Case 2	Case 3
Pre-Supplementation	1.9	2.5	2.4
Post-Supplementation	2.1	2.7	2.6
Increased By	0.2	0.2	0.2

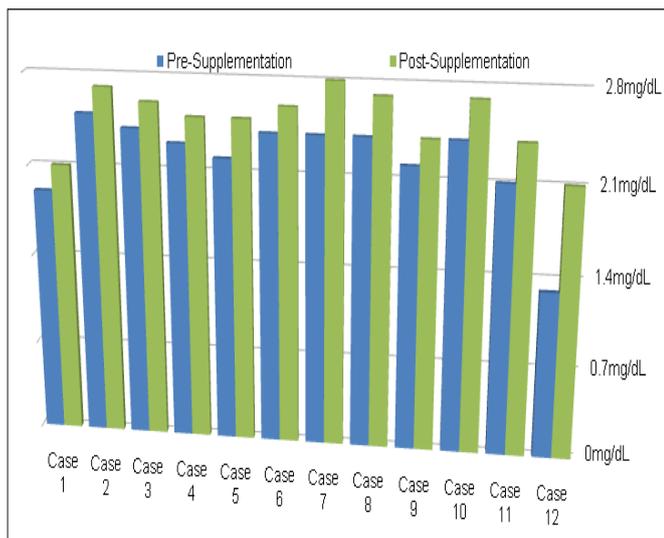
**Table 1:** Group A Supplementation Dosage = 1 Capsule/Day Duration = 30 Days

Serum Magnesium Values (mg/dL)	Case 4	Case 5	Case 6	Case 7	Case 8	Case 9
Pre-Supplementation	2.3	2.2	2.4	2.4	2.4	2.2
Post-Supplementation	2.5	2.5	2.6	2.8	2.7	2.4
Increased By	0.2	0.3	0.2	0.4	0.3	0.2

**Table 2:** Group B Supplementation Dosage = 2 Capsules/Day Duration = 30 Days.

Serum Magnesium Values (mg/dL)	Case 10	Case 11	Case 12
Pre-Supplementation	2.4	2.1	1.3
Post-Supplementation	2.7	2.4	2.1
Increased By	0.3	0.3	0.8

**Table 3:** Group C Supplementation Dosage = 2 Capsules/Day Duration = 60 Days.



**Figure 1:** Serum Magnesium Levels Pre- & Post-Supplementation of Active Magnesium.

## Discussion

It could be stipulated that Mg is required and gets used up by the body to a great extent in the healthy and the ill [12,13]. Magnesium deficiency regardless of levels of severity can pose major health threats and is a potential health hazard [14]. Magnesium supplementation provides a reliable source of this essential mineral when foods become depleted. Evidently, the active form of Mg utilized under the Yod-Ying Protocols are readily absorbed, provided that the requirement of acidic environment is maintained during intakes. Even though the rate of which absorption and utilization are not indicated, it is evident that this active Mg is bioavailable. The values of increased serum magnesium after supplementation also vary very little among the cases reported. High-potency medicinal extracts derived from innovative technologies can help provide a short duration supplementation, starting from only 30 days of single capsule daily.

The body has effective mechanisms of utilizing Mg and maintaining its homeostasis throughout the day. When Mg supplies in the body become short, the body can absorb and retain it to a higher extent. And Mg supplement can raise serum

magnesium and improve series of low magnesium status [15]. In this case series report, an average of serum magnesium increase is calculated at 0.3 mg/dL. However, with one report: Case 12, an increase was rather high at 0.8 mg/dL. This is possibly due to the fact that there is a potential deficiency within the body stores, with serum level of only 1.3mg/dL. So when Mg from supplementation is available, the body absorbs and utilizes with a much more effective rate and mechanism than those cases whose serum magnesium levels are not yet critically low.

It can be concluded that an active form of Mg supplementation, prepared from pure magnesium salts with laboratory reactions under specifically set temperature range can support its ions release in the gut and be absorbed and utilized by the body, provided that the patients cooperate in strictly following the timing and intake requirements. A supplementation of any super nutrients or medicinal extracts can render less therapeutic when it cannot be adequately bioavailable. Patient's participation is always crucial in making medicine effective.

## Acknowledgement

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## Dedication

The authors wish to put forward a full dedication of this publication to Dr. Yod-Ying Dhebtaranon, the founder and former director of Bacteria and Virus Research Center, whose soul now rests in peace in heaven. From whom, the research center was established, for over 2 decades, as a non-profit organization to find reliefs for hard-to-cure diseases. The therapeutic approach applied to these cases was from an extensive research and development by Dr. Yod-Ying Dhebtaranon, of which had made it all possible for this case series report and the continuity of further research works to benefit the health and healing of mankind.

## References

1. Weast RC (1987) Handbook of Chemistry and Physics. Boca Raton, CRC Press, USA.
2. Goh N (2017) Magnesium: A complete primer. CanPrev, Canada.
3. Gerry KS, Stephen JG (2017) The importance of magnesium in clinical healthcare. Scientifica 4179326.
4. Wilhelm JD, Markus K (2012) Magnesium basics. Clin Kidney J 5(Suppl 1): i3-i14.
5. Yod-Ying D (2013) Compromised physiological functions as a result of magnesium deficiency: A review. Bacteria and Virus Research Center p. 1-51.
6. McCance RA, Widdowson EM (2000) A study on the mineral depletion of the foods available to us as a nation over the period 1940-1991. Summary of 1st to 5th Edition

“The chemical composition of foods”. RSC/MAFF.

7. Rosanoff A (2013) Changing crop magnesium concentrations: Impact on human health. *Plant Soil* 368(1-2): 139-153.
8. Moshfegh A, Goldman J, Cleveland L (2005) What we eat in America, NHANES 2001–2002: Usual Nutrient Intakes from Food Compared to Dietary Reference Intakes, USDA Agricultural Research Department.
9. Adela H, Nicola MM (2016) Magnesium deficiency. *Nutrition Today* 51(3): 121-128.
10. Elin RJ (2010) Assessment of magnesium status for diagnosis and therapy. *Magnes Res* 23: 194-198.
11. Ryan MF, Barbour H (1998) Magnesium measurement in routine clinical practice. *Ann Clin Biochem* 35:449-459.
12. Edward TW, Robert KR, Frederick RS and Shaw Jr ST (1983) A high prevalence of hypomagnesemia and hypermagnesemia in hospitalized patients. *Am J Clin Pathol* 79: 348-352.
13. Uwe G, Joachim S, Klaus K (2015) Magnesium in prevention and therapy. *Nutrients* 7(9): 8199-8226.
14. Saris NE, Eero M, Heikki K, Jahangir AK, Andrzej L (2000) Magnesium: An update on physiological, clinical and analytical aspects. *Clinica Chimica Acta* 294: 1-26.
15. Forrest HN, LuAnn KJ, Huawei Z (2010) Magnesium supplementation improves indicators of low magnesium status and inflammatory stress in adults older than 51 years with poor quality sleep. *Magnesium Res* 23(4): 158-68.

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