

# APPLYING CHATGPT-4 TURBO TO ASSESS THE UNDERSTANDABILITY AND ACTIONABILITY OF PHARMACIST-RECOMMENDED DIETARY SUPPLEMENT LABELING

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## INTRODUCTION

Over 60% of the U.S. population uses dietary supplements (DSs). DSs are associated with ~20,000 ER visits yearly. The Patient Education Materials Assessment Tool (PEMAT-P) is used to assess understandability and actionability of patient education materials and can be applied to printable pharmaceutical product labels to assess health literacy.

## OBJECTIVE

To determine the Understandability and Actionability of DS labels using PEMAT-P scores generated by ChatGPT-4 Turbo, applied to labels of the DS most often recommended by Pharmacists

## RESULTS

PEMAT-P Evaluation Summary

Product	Understandability (%)	Actionability (%)
Citracal Gummies	87.5	100
Nature Made Fish Oil (Burp-Less)	81.0	75
Nature Made CoQ10	87.5	100
Osteo Bi-Flex Regular Strength	81.0	75
Nature Made Flaxseed Oil	81.0	75
Nature Made Calm & Relax	87.5	100
Garlique	87.5	100
Emergen-C (Super Orange)	93.75	100
Slow Fe	87.5	100
Nature Made Omega-3 Fish Oil	87.5	100
Centrum Silver Adults 50+	87.5	75
PreserVision AREDS 2	93.75	100
Prevagen Regular Strength	81.25	75
One A Day Prenatal	87.5	100
Mag-Ox 400	93.75	100

## METHODOLOGY

The OTC Guide (pictured above), a resource guide that includes Pharmacists’ top-rated over-the-counter products, was used to identify 15 categories of DSs. The NIH’s Dietary Supplement Label Database was then searched to identify DS labels associated with these products. A screenshot of the DS label was uploaded to ChatGPT-4 Turbo, which is the most advanced version of ChatGPT currently available. ChatGPT-4 Turbo was asked “Can you apply PEMAT-P (pictured above) to this screenshot and score it?” Scores were obtained for the Understandability and Actionability of each label. Note: One label (Mag-Ox 400) was not found in the DS Label Database but was available on Amazon.com

## DISCUSSION

Higher scores on the PEMAT-P indicate that the patient education material is more understandable or actionable.

When consumers of diverse backgrounds and varying levels of health literacy can:

- process and explain key messages, patient educational material is **understandable**
- identify what they can do based on the information presented, patient education material is **actionable**



### RELATED LITERATURE

The 2024 Pharmacy Times OTC Guide can be accessed at [https://cdn.sanity.io/files/0vv8moc6/pharmacytimes/ca3b041a2d56c76aa313cabf972db31b5535b402.pdf/2024OTCGuide-Full\\_Issue.pdf](https://cdn.sanity.io/files/0vv8moc6/pharmacytimes/ca3b041a2d56c76aa313cabf972db31b5535b402.pdf/2024OTCGuide-Full_Issue.pdf)

Shoemaker SJ, Wolf MS, Brach C. The Patient Education Materials Assessment Tool (PEMAT) and User’s Guide. (Prepared by Abt Associates, Inc. under Contract No. HHS290200900012I, TO 4). Rockville, MD: Agency for Healthcare Research and Quality; November 2013. AHRQ Publication No. 14-0002-EF.[https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://www.ahrq.gov/sites/default/files/publications/files/pemat\\_guide.pdf&ved=2ahUKEwicgrSe5u2MAxWSAHkGHWAkJYgQFnoECBgQAQ&usg=AOvVaw3ImNg2vKxOHB1fxL5X7W3](https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://www.ahrq.gov/sites/default/files/publications/files/pemat_guide.pdf&ved=2ahUKEwicgrSe5u2MAxWSAHkGHWAkJYgQFnoECBgQAQ&usg=AOvVaw3ImNg2vKxOHB1fxL5X7W3)

## CONCLUSION

- Using ChatGPT-4 Turbo to assess PEMAT-P scores for DS labels of products most recommended by Pharmacists, it was determined that the labels had:
  - a high degree of Understandability ranging from 81-93.75% (difference: 12.75%)
  - a more variable degree of Actionability ranging from 75-100%. (difference: 25%)
- This information provides reassurance that important information is present on DS labels of products most recommended by Pharmacists. Pharmacists can educate about areas that are deficient in the product labeling.
- The most common deficiencies in labeling identified (data not shown) for :
  - Understandability was failure to define medical terms and lack of a summary
  - Actionability was a failure to use visual aids to make action easier
  - Limitations: the abstract was based on an older version of ChatGPT and the PEMAT-P was not scored independently by the investigator
- ChatGTP can be applied to the PEMAT-P to evaluate DS label literacy to enhance health literacy.