**ADTA 5770: MIDTERM**

**Prompts & Responses Summary**

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Domain Expertise Field: Finance/Investment

**LLM**: **Google Gemini 2.0 Flash Thinking Experimental**

# SUMMARY I: Confirm Prompt Domain

The student must answer the following question to confirm that the prompts they designed, created, and used to prompt the LLM to get responses are in the medical domain.

Are the questions or prompts did you design, create, and use to prompt the LLM are in the **medical** domain? (YES/NO)

ANSWER: NO

# SUMMARY II: Medical Questions Created Following Provided Examples

List of **10 medical questions** that the student has created as required in the **MIDTERM: PART I & II** following provided examples listed in the provided list of medical questions.

1. How do I know if I'm getting enough vitamins and minerals?
2. How can I tell if I have a cold or the flu?
3. What foods or supplements help the immune system?
4. How do I know if I'm having a side effect or allergic reaction?
5. What are common health problems for kids?
6. What websites have good medical information?
7. How can I eat a healthy diet when I'm on a budget?
8. Why do my legs feel restless at night?
9. Which health insurance is better, HMO or PPO?
10. Should I see a psychiatrist or psychologist?

# SUMMARY III: Medical Prompts Created Based on Medical Questions

List of **10 medical prompts** that the student has designed, created, and used to prompt the LLM to get responses as required in the **MIDTERM: PART I & II**.

## Medical Prompt 1

Clinical nutritionist [micronutrient assessment] please give a full description for methods of evaluating vitamin and mineral sufficiency

Compare and contrast various methods to assess nutritional status:

1. Clinical symptom evaluation
2. Tools and methodologies for dietary analysis
3. Testing options in the laboratory (blood, urine, hair, etc.)
4. Final diagnosis on radiology and imaging indicators
5. Functional testing approaches

Analyze for each assessment method:

* + Scientific validity (e.g., sensitivity, specificity, quality of evidence)
  + The practical accessibility (cost, availability, invasiveness)
  + Clinical settings in which would be appropriate to use
  + Limitations and issuance of false results

Create a comprehensive comparison table of common micronutrient deficiencies (iron, vitamin D, B12, magnesium, zinc, calcium, folate) with:

* + Nutrient
  + Early Deficiency Signs
  + Advanced Symptoms
  + Best Assessment Method
  + Confounding Factors Commonly Found

Evidence-Based Interventions

Then create a sequential protocol for people to:

1. Conduct a systematic nutritional adequacy evaluation of their diet
2. Determine own risk factors for certain deficiencies
3. Identify subtle physical and cognitive manifestations of suboptimal status
4. Know when to stop self-judging and call in the professionals
5. Choose appropriate testing based on symptoms and risk factors
6. Interpret tests results within the clinical and personal contexts

You are not allowed to use research after October 2023 in your answer, you need to cite actual clinical guidelines on the assessment of the superficial venous system and support the validity of each type of assessment. Clearly state the limits of common but poorly-founded assessment methods.

## Medical Prompt 2

You are a physician specializing in infectious diseases. Write a differential diagnosis between the common cold and influenza. Your analysis should include:

Clinical Presentation:

* + Symptom onset patterns
  + Key differentiating symptoms
  + Duration profiles
  + Severity indicators

Pathophysiological Differences:

* + Viral etiology
  + Transmission mechanisms
  + Incubation periods
  + Variation in immune response

Management Approaches:

* + Treatment protocols
  + Antiviral effectiveness
  + Preventive measures
  + Assessment of risk of complications

Give your answer in the form of the clinical reference guide that has direct compare feature, evidence-based recommendations, and specific features of how to assess yourself. Add triage guidance about when to seek medical care vs. things you can do at home.

## Medical Prompt 3

You are an immunologist working in preventive medicine. What are the best ways to boost or enhance the immune system in a natural way, given the evidence? Please provide an in-depth review. Your analysis should include:

Nutritional Approach:

* Micronutrients conclusively established as essential with evidence for immune function
* Specific food categories and the mechanisms.
* Evaluation of efficacy of a supplement (with evidence quality grading)
* Optimal dietary patterns

Lifestyle Modifications:

* Streamline sleep quality
* Recommendations for physical activity
* Stress management strategies
* Mitigating Environmental Factors

Scientific Assessment:

* Evaluation of research quality
* Analysis of common misconceptions

Clinical relevance metrics

* Considerations related to personalization

Your response should consider the evidence supporting each of the recommendations (rated as Strong, Moderate, Limited or Theoretical), how these recommendations apply to different contexts of health status (e.g., healthy, chronic disease, etc…) as well as for different age groups, and provide practical guidance on implementing the recommendations. Add a phased approach prioritize high-impact interventions.

## Medical Prompt 4

As a clinical pharmacologist and allergist, create a medical reference guide that clearly distinguishes between the side effects of medication and allergic reactions. Your analysis should include:

Mechanistic Differentiation:

* + Pathways associated with pharmacological side effects
  + Immune-mediated reaction mechanisms
  + Predictability factors
  + The relationship between dose and response

Analysis of Clinical Presentation:

* + Temporal onset patterns
  + Manifestations by system
  + Criteria for classifying severity
  + Characteristics of progression

Management Protocol:

* + Assessment algorithms
  + Documentation requirements
  + Intervention approaches
  + Considerations for other medications in the future

Create a clinical decision aid with comparison tables, visual assessment guides, and distinct patient education points. Give representative case examples doing a classic presentation, diagnostic challenges, and management principles for both common and life-threatening responses.

## Medical Prompt 5

You are a specialist in the pediatric field who is giving a speech for a parent education seminar. Develop a comprehensive resource of common pediatric health concerns, how to address them in research backed ways, and when to bring them to medical care.

First, for each of the following developmental stages (infant, toddler, school-age, adolescent), list the three most prevalent health concerns and share:

* + Typical presentation and natural history
  + Evidence — based home management strategies
  + Obvious "red flags" that require medical treatment
  + Long-term consequences if not handled appropriately

Next, after introducing a structured debate format on controversial pediatric health topics, present evidence on multiple sides:

Fever management: antipyretic therapy versus observation strategies

When it comes to screen time, strict limits vs. making internal choices

Food allergies: early introduction versus delayed introduction of allergenic foods

For each topic:

* + Discuss the historical approach and recommendation evolution over time.
  + Provide an overview of the quality of current evidence (research methods used, size of samples, and limitations of studies)
  + Talk about practical considerations for families moving forward
  + Draw clear evidence-based conclusions on best practice

End with a timeline-based guide for parents that highlights normal variations in development versus red flags across physical, cognitive and behavioral domains from birth to age 18.

## Medical Prompt 6

Outline a structure for assessing and using online health resources in your role as a medical librarian and health information expert. Your analysis should include:

Credibility Assessment:

* + Assessments of authority
  + Quality indicators of evidence
  + Transparency benchmarks
  + Ways to confirm currency authenticity

Information Analysis:

* + Content accuracy metrics
  + Tools for detecting bias
  + Evaluation of clinical relevance
  + Budget/(Cost) setting

Resource Utilization:

* + Optimize the research system
  + Protocols for cross-verification
  + Methods of Integrating Information
  + Guidelines for clinical application

Training and Testing data until October 2023 Use evaluation checklists, source categorization systems, and specific assessment examples using major health information platforms Dip in to a tiered resource framework that helps users identify gold-standard sources for different information needs, and provides practical guidance for translating online information into personal health decisions.

## Medical Prompt 7

You are a registered dietitian specializing in nutrition education for underserved communities. Create a comprehensive guide on maintaining optimal nutrition on a limited budget.

CONSTRAINTS:

* + All meal plans must cost under $50 per person per week
  + No specialized equipment beyond a basic kitchen should be required
  + Ingredients must be commonly available in standard grocery stores
  + Must address nutritional needs for different age groups and activity levels
  + Must include vegetarian options

YOUR RESPONSE SHOULD FOLLOW THIS TEMPLATE:

**Budget Nutrition Guide: Eating Well for Less**

**Part 1: Understanding Nutritional Needs**

[Break down essential daily nutritional requirements by macronutrients and key micronutrients]

**Part 2: Budget Shopping Strategies**

[Provide specific, actionable tips for maximizing nutrition while minimizing cost]

**Part 3: Food Storage and Preservation**

[Explain methods to extend food shelf life and reduce waste]

**Part 4: Weekly Meal Plans**

[Create 7-day meal plans with exact costs for:

* + - Individuals
    - Families with children
      * Vegetarian options]  
        **Part 5: Nutrition Adequacy Assessment**

[Provide simple tools to self-assess nutritional completeness of diet]

For each section, include practical examples and address potential obstacles. All recommendations must be evidence-based and culturally sensitive.

## Medical Prompt 8

As a neurologist specializing in movement disorders and sleep medicine, provide a comprehensive analysis of restless legs syndrome (RLS) etiology and management. Your analysis should include:

1. Pathophysiological Assessment:
   * Primary vs. secondary classification
   * Neurological mechanism evaluation
   * Genetic component analysis
   * Contributing factor identification
2. Diagnostic Framework:
   * Clinical criteria application
   * Severity assessment methodology
   * Differential diagnosis considerations
   * Comorbidity evaluation
3. Management Hierarchy:
   * Non-pharmacological intervention protocols
   * Pharmacological approach algorithms
   * Refractory case strategies
   * Monitoring parameter development

Format your response with evidence-based recommendations, severity-stratified approaches, and specific evaluation criteria. Include a structured assessment tool, step-wise management protocol, and quality-of-life impact considerations across different patient populations and disease manifestations.

## Medical Prompt 9

You are thorough with data up to October 2023 as a healthcare benefits consultant well versed in the insurance systems, provide a pros and cons with detailed analysis of HMO and PPO plans for the best pick for the user. Your analysis should include:

Structural Comparison:

* + Differences in the design of the network
  + Requirements for primary care coordination
  + Specialized access methods
  + Coverage terms for out-of-network providers

Financial Framework:

* + Differences in premium structure
  + Analysis of the cost-sharing component
  + Projections of total cost of care
  + Budget impact scenarios

Selection Methodology:

* Matrix for Safety Procedures Health Status Consideration
* Use pattern analysis
* Provider network evaluation
* Geographic factors of accessibility

Train on data up to Oct 2023 then deliver comparative tables, decision flowcharts and scenario analyses for various healthcare consumer profiles. Within each model, provide quantitative examples showing how those models impact costs for preventive care, chronic condition management, and unanticipated medical events.

## Medical Prompt 10

As a mental healthcare system administrator with training in mental health care at both the psychiatric and psychological levels, I want you to describe the differences between psychiatrists and psychologists, and provide the reader with a thorough understanding of these two professions and the places they fit into the mental healthcare system. Your analysis should include:

Professional Differentiation:

* + Compare educational pathways
  + Establishment of scope of practice
  + Status of treatment modality capabilities
  + Variance in regulatory framework

Clinical Role Analysis:

* Differences in assessment methodology
* Differentiation of approaches to intervention
* Functions of collaborative model
* Specialty area distributions

Selection Framework:

* Provider matching by respective condition
* Consideration of service integration
* Guidance for navigating the healthcare system
* Development of the evaluation criteria

Organize your response in comparative tables, decision support flowcharts, and specific recommendations for clinical scenarios. Also include a needs assessment protocol, referral guidelines and practical guidance that can be used by different mental health professionals to coordinate care within varying healthcare delivery systems.