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AI Translation of English Abbreviations into Arabic: Problems and Solutions

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Abstract

This study investigates the crucial role of context and registers in ensuring the accuracy and appropriateness of translating English medical abbreviations into Arabic by two AI systems, ChatGPT and Perplexity. It hypothesizes that the absence of contextual and register cues leads to mistranslation or semantic distortion, whereas contextualized medical discourse enables accurate, domain-appropriate renderings. The research aims to analyse how both systems interpret medical abbreviations in decontextualized and contextual settings, and to assess the extent to which their translations conform to the conventions of the Arabic medical register. The corpus consists of five selected medical abbreviations — INR, DI, LDL, CI, and HRT —chosen for their high frequency and terminological stability. Each abbreviation is analysed in both decontextualized and contextualized sentences, resulting in two target-language versions: TLT1 (ChatGPT) and TLT2 (Perplexity). The analysis identifies the use of literal translation, transference, and addition techniques, and evaluates them according to their contextual conformity and register appropriateness. The findings reveal that both AI systems succeed when contextual and register cues are present but fail when such cues are absent, yielding inaccurate or non-medical renderings. The study concludes that contextualization is crucial for disambiguating medical abbreviations and ensuring accurate functionality in Arabic.

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الترجمة الآلية للاختصارات الإنكليزية الى العربية: المشكلات والحلول

اثيل عبد الخالق سعيد *

المستخلص:

تتناول هذه الدراسة الدور الحاسم للسياق ونمط النص في ضمان دقة وملائمة ترجمة الاختصارات الطبية الإنكليزية إلى العربية بواسطة نظامي ذكاء اصطناعي هما تشات جي بي تي (ChatGPT) وبيرلبلكستي (Perplexity). وتنطلق من فرضية مفادها ان غياب الإشارات السياقية ونمط النص يؤدي الى ترجمة غير دقيقة أو تشوه دلالي، بينما يتيح سياق الخطاب الطبي ترجمات دقيقة وملائمة للمجال الطبي. ويهدف البحث الى تحليل كيفية تفسير كلا النظامين للاختصارات الطبية ضمن السياق وخارج السياق، وتقييم مدى توافق ترجماتها مع اعراف السجل الطبي العربي. يتألف المتن من خمس اختصارات طبية هي: INR وDI وLDL وCI وHRT، تم اختيارها بناء على شيوعها العالي وثباتها المصطلحي. ويُحلل كل اختصار ضمن جمل بلا سياق وأخرى ضمن السياق، منتجا نسختين من اللغة الهدف

*** قسم اللغة الفرنسية / كلية الاداب / جامعة الموصل / الموصل ـ العراق**

1(ChatGPT) واللغة الهدف 2 (Perplexity). وتحدد الدراسة استخدام تقنيات الترجمة الحرفية والنقل والإضافة، مع تقييمها وفقا لمدى ملائمتها للسياق ونمط النص الطبي. وتكشف النتائج أن كلا النظامين يحققان نجاحا عند توفر الإشارات السياقية ونمط النص، لكنهما يفشلان عند غيابها، مما يؤدي الى ترجمات غير دقيقة وغير طبية. وتخلص الدراسة إلى نتيجة مفادها ان السياق يعد عاملا جوهريا في إزالة الغموض عن الاختصارات الطبية وضمان أدائها الوظيفي الدقيق في اللغة العربية.

الكلمات المفتاحية: الذكاء الاصطناعي، الترجمة، الاختصارات، السياق، النمط اللغوي

Introduction:

In linguistics, a register is a distinctive variety of language usage based on the communicative situation, subject matter, or context (Halliday & Hasan, 1976). This concept, which was created in the middle of the 20th century, makes a distinction between how language structure, vocabulary, and formality shift depending on the field (topic), mode (written or spoken), and tenor (interlocutors' social relationships) of the discourse (Halliday & Hasan, 1976). Effective communication requires it, particularly in scientific registers where language and abbreviations intended for expert audiences are used distinctively (Chapman, 1982). In English, "register" refers to the variation in language use depending on the audience, context, and purpose. It encompasses different varieties of language that speakers select based on the intended function of the discourse, the participants in communication, and the social context (Halliday, 1994). Scientific writing is a prime example of a highly codified register, which ranges from extremely formal to colloquial (Pescuma et al., 2023).

Abbreviations, such as initialisms, truncations, and codes, are common in scientific fields because they can compress technical content for expert readers. However, this compression increases semantic under-specification in general-purpose AI systems. Quality in English-Arabic translation depends on two operations: (i) sense selection (identifying the intended expansion among competing candidates) and (ii) strategy realization (rendering that expansion into Arabic with conventional terms and correct morpho-syntax (definiteness, iḍāfa, agreement, and institutional nomenclature) (Halliday, 1994; Baker, 2011). The distribution of forms across domains exacerbates the difficulty: many short forms are polysemous and domain-sensitive—for example, PT may denote physical therapy in a clinical note but prothrombin time in hematology; HR may denote heart rate in physiology but human resources in administrative prose; ROI can be region/area of interest in imaging research but return on investment in management. In the absence of accurate co-text (nearby terms) or situational context (domain, audience, genre), models tend to resort to high-frequency expansions or transliteration, both of which violate Arabic discipline rules (Baker, 2011; Halliday & Hasan, 1976). This study addresses two questions: (i) why AI systems occasionally fail to select an appropriate translation for abbreviations, and (ii) which techniques are effective in practice. The information is limited to the medical register. To ensure methodological clarity, acronyms that constitute pronounceable words (such as NATO) are excluded from the analysis and tables. The emphasis is on letter-like or fragmentary forms, where AI systems encounter problems.

Abbreviation: Concepts, Types, Functions

Crystal (2008) defines an initialism as a combination of initial letters pronounced as individual letters (e.g., PT, HR, BP), as opposed to an acronym, which is pronounced as a word. Initialisms are highly domain-sensitive: PT may denote physical therapy in clinical notes but prothrombin time in hematology; HR may denote heart rate in physiology but human resources in administration. Truncation, a word-formation process that forms a shorter lexical item by eliminating one or more segments or syllables from a longer base word, usually keeping either the left or right edge of the base (e.g., lab from laboratory), is another example of abbreviation. The truncated form normally retains the core meaning and lexical category of the base, and it differs from initialisms/acronyms (which accept initials) and back-formation (which creates a new base by eliminating a putative prefix) (Bauer et al, 2013). Furthermore, a code is a short, often alphanumeric designation assigned and maintained within a specialized domain to designate a carefully defined notion, allowing for unambiguous reference and efficient data exchange (e.g., US, USD, ISBN, CI, SD) (Bowker & Pearson, 2002).

Monsen (2023) describes codes as formally controlled, domain-specific designations used for clear reference and interoperability; existing practice demonstrates this in health and reporting contexts, such as INR in clinical labs and CI/SD in statistical reporting. Writers use abbreviations to compress recurring, frequently technical terms (e.g., DNA, CI, SD) so that dense texts fit within the limits of titles, tables, captions, and messages while maintaining referential correctness (Haspelmath & Sims, 2010). Once a complete form is established, an abbreviation allows for consistent "same-thing" references across sentences and sections, minimizing unnecessary repetition and keeping the text coherent (Halliday & Hasan, 1976; Bauer et al., 2013).

In terms of discourse, this supports ties that help readers construe a text as a single whole (Halliday & Hasan, 1976). Because abbreviations are compact, repetitive strings, they make indexing, searching, and automatic linking of short and long forms in corpora easier; this has inspired robust algorithms for identifying and expanding abbreviations (Schwartz & Hearst, 2003). Known abbreviations minimize production effort and, after their first mention, can make processing easier for specialists; nevertheless, unfamiliar or excessive abbreviations increase cognitive load and impede reading as readers seek definitions.

Abbreviations, Register, and AI

Abbreviations are ubiquitous in technical and everyday English (e.g., BP, CI, DNA, INR), and they pose recurring challenges for natural language processing (NLP) systems in detection, expansion, and sense disambiguation. Untreated abbreviations in AI pipelines affect downstream activities such as entity linking, information retrieval, summarization, and clinical decision support; however, principled abbreviation handling significantly improves model performance and interoperability. Specialized abbreviations are frequently used in scientific writing to promote concision and adhere to universal writing conventions. Standard units of measurement (e.g., "m" for meter) and abbreviations such as "EEG" for "electroencephalography" should ideally be introduced first in their full form, followed by the shortened form in parentheses. The practice maintains the clarity and consistency of academic papers (Biber et al., 1999). In Arabic scientific literature, where abbreviations are usually reflected or supplemented with recognized Arabic counterparts when accessible, this uniformity assists researchers and interpreters in rendering information consistently.

Abbreviations, as a linguistic-economy concept, are used to reduce repetition and duplication in language use, thereby increasing communication efficiency. According to Minyar-Beloroucheva et al. (2019), abbreviations serve as secondary nomination units, developing independent semantic properties over time and becoming essential in professional, medical, and political registries. Scientific publications often use abbreviations to simplify repetitive medical terms; however, they must be used carefully to maintain reader comprehension and clarity. In scientific writing, careful consideration of register guarantees appropriateness and clarity. The majority of style guidelines recommend that abbreviations be used appropriately and presented only when the intended audience is familiar with them. By showing how context influences language choice and comprehension, this interaction between register and abbreviation emphasizes the effectiveness and possible hazards of linguistic economy.

AI-driven translation systems have transformed the field of English-Arabic translation, particularly in handling abbreviations and acronyms. As the use of AI tools develops, Owidi et al (2024) point out that, despite modern models such as ChatGPT and Perplexity employing advanced algorithms, they still struggle to discern nuances. They demonstrate their inability to deliver accurate, valuable information due to a lack of common sense and emotional intelligence.

Methodology

This paper adopts a comparative analytical approach to examine the role of context and register in the translation of English medical abbreviations into Arabic by two AI systems, ChatGPT and Perplexity. The data consist of five English medical abbreviations, “INR, CI, DI, LDL, and HRT, " formulated carefully to investigate how context and register influence translation outcomes. The self-created sentences allow precise control over linguistic variables, ensuring a clear comparison between decontextualized sentences and fully contextualized medical sentences. Both systems were assigned to produce Arabic translations of these sentences, and their outputs were categorized as Target Language Text 1 (TLT1) for ChatGPT and Target Language Text 2 (TLT2) for Perplexity. Each pair of translations was analyzed in light of the translation techniques employed —literal translation, transference, and addition —and their appropriateness was evaluated based on their alignment with the contextual and register demands of the target text. The analysis was organized in a series of comparative tables that illustrate how each abbreviation was rendered by the two systems under contextual and decontextualized conditions. The evaluation criteria focus on whether the translation conformed to specialized medical register conventions and accurately reflected the meaning of the abbreviation in its professional domain.

Model Adopted

The translation techniques of transference and literal translation are well-established in translation studies. The concept of transference was first systematically discussed by Vinay and Darbelnet (1995). They define transference as the direct transfer of a word or expression from the source language into the target language without translation, typically when the term is culturally or technically specific and lacks an adequate equivalent. This method is particularly relevant in scientific and medical translation, where international terms and abbreviations such as “HRT, INR, LDL” are standardized across languages, and it serves to preserve precision and authenticity in technical discourse (Vinay & Darbelnet, 1995). According to Newmark (1988), the literal translation technique is the faithful and direct rendering of grammatical structure and lexical meanings from the source language into the target language, provided that such transfer produces an acceptable and natural result in the target text.

Data Analysis

The following table lists the five medical abbreviations, their full forms, and their interpretations.

Abbreviation	Full Form	Interpretations
INR	International Normalized Ratio	It is a medical abbreviation that refers to a standardized blood test that measures how long it takes for blood to clot (Venes, 2025).
CI	*Cardiac Index*	It is a clinical parameter that quantifies cardiac output relative to body surface area, providing a standardized measure of cardiac performance. (Jayatilake, 2023).
DI	Diabetes Insipidus	This medical abbreviation refers to a condition in which the body cannot keep the correct amount of water in its system (Venes, 2025).
LDL	Low-Density Lipoprotein	It is a test showing the levels of cholesterol in the blood (Venes, 2025).
HRT	*Hormone Replacement Therapy*	It is a treatment that involves administering hormones (Venes, 2025).

Decontextualized Medical Abbreviations

1. The final document included **INR** in the list of results.

Table (1)

NO.	TL Text	Translation Technique	Appropriateness
1	تضمن المستند النهائيINR في قائمة النتائج.	Transference	-
2	شمل الوثيقة النهائية قيمة INR في قائمة النتائج.	Transference & addition	-

Discussion

The two TL texts show similar inappropriate renderings of the medical abbreviation "INR". The two AI programs resort to transference as a translation technique, which, in turn, results in awkward Arabic sentences. A little exception is with TL text (2) using the word (قيمة) before the abbreviation. Neither can reproduce the Arabic equivalent of the SL abbreviation. The appropriate rendering of this abbreviation can be realized through the literal translation of the full form of this abbreviation, as in: النسبة المعيارية الدولية

2. The table displays CI alongside other statistical values.

Table (2)

NO.	TL text	Translation Technique	Appropriateness
1	يعرض الجدول فترة الثقة (CI) الى جانب القيم الإحصائية الأخرى.	Transference & Literal	-
2	يعرض الجدول فاصل الثقة (CI) الى جانب القيم الإحصائية الأخرى.	Transference & Literal	-

Discussion

Table 2 shows the inappropriate use of the literal technique by the two TL texts. They both provide wrong literal translations of the abbreviation "CI" by rendering it to (فترة الثقة) and (فاصل الثقة), which both mean "confidence interval". Also, the use of the transference technique here is inappropriate because the direct translation of the English abbreviation "CI" into Arabic, without interpretation, leads to semantic distortion and domain-specific meaning.

3. The report included the **DI** for all participants.

Table (3)

NO.	TL text	Translation Technique	Appropriateness
1	تضمن التقريرDI لجميع المشاركين	Transference	-
2	تضمن التقرير مؤشر التوزيع لجميع المشاركين.	Literal	-

Discussion

The table above shows the use of two translation techniques. The borrowing technique is used by TLT (1), and formal equivalence is adopted by TLT (2). The use of these two techniques does not yield appropriate translations, and both TL texts fail to convey the medical sense of the abbreviation. These two translation techniques are inappropriate because they fail to convey the original meaning of the medical abbreviation DI, given the absence of medical context or any clues.

4. LDL was discussed briefly at the end of the presentation.

Table (4)

NO.	**TL text**	**Translation Technique**	**Appropriateness**
1	بإيجاز في نهاية العرض التقديمي LDLتمت مناقشة	Transference	-
2	بإيجاز في نهاية العرض التقديمي LDLتمت مناقشة	Transference	-

Discussion

Here again, the renderings provided by the two TL texts are inappropriate, and their use of the translation technique of borrowing proves ineffective in conveying the SL meaning of the blood test. This is also due to the lack of any contextual reference to medical sense in this sentence.

5. She scribbled **HRT** in her notes, hoping it would make sense later.

Table (5)

NO.	**TL text**	**Translation Technique**	**Appropriateness**
1	ظهرت HRTعدة مرات في مسودة المستند	Transference	-
2	ظهر الاختصار HRTعدة مرات في مسودة الوثيقة.	Transference & Addition	-

Discussion

The translations of the SL abbreviation HRT show the use of the borrowing technique. In TL text (1), the HRT abbreviation is directly transferred into the TL texts with no change or addition. Whereas, TL text (2) uses an addition by the word (الاختصار), which is a justifiable step to explicate the SL meaning. Despite borrowing preserving the specialized register, the two texts fall short in providing the appropriate equivalent of this abbreviation for the target reader who is unfamiliar with its meaning or context.

Contextualized Medical Abbreviations

1. The patient’s **INR** was elevated after starting anticoagulant therapy, indicating an increased risk of bleeding. **Table (1)**

NO.	**TL text**	**Translation Technique**	**Appropriateness**
1	ارتفع معدل النسبة المعيارية الدولية (International Normalized Ration – INR) لدى المريض بعد البدء بعلاج مضاد التخثر، مما يشير الى زيادة خطر النزيف.	Literal & addition	-
2	كان مستوى النسبة المعيارية الدولية (INR) لدى المريض مرتفعا بعد بدء العلاج بمضادات التخثر، مما يشير الى زيادة خطر النزيف.	Literal & transference	+

Discussion

Both translations correctly convey the medical concept of *International Normalized Ratio*, but they differ in register awareness and communicative adequacy. Translation 1 accurately renders the abbreviation but adds redundant English information, making it better suited to didactic material than to clinical writing. As for translation 2, it achieves both technical accuracy and register conformity, following the norms of professional Arabic medical language, where the abbreviation INR is never expanded.

2. The patient's **CI** was measured to assess cardiac function and determine the adequacy of blood flow relative to body surface area.

NO.	**TL text**	**Translation Technique**	**Appropriateness**
1	تم قياس مؤشر القلب (Cardiac Index) لدى المريض لتقييم وظيفة القلب وتحديد مدى كفاية تدفق الدم بالنسبة لمساحة سطح الجسم.	Literal	+
2	تم قياس المؤشر القلبي (CI) لدى المريض لتقييم وظيفة القلب وتحديد مدى كفاية تدفق الدم بالنسبة لمساحة سطح الجسم.	Literal & transference	+

Discussion

The two translations of "CI" (Cardiac Index) in the target language (Arabic) employ different translation techniques, which are influenced by register and context, thereby affecting their appropriateness. The first translation employs a literal approach, presenting the Arabic form alongside the English for clarity and translating the term as مؤشر القلب (Cardiac Index). This indicates that the full original phrase is translated exactly as it is, without any omissions. In contrast, the second translation combines literal translation with the transfer of the abbreviation enclosed in parentheses: (المؤشر القلبي) “CI”. The Arabic phrase in this instance is a literal translation of "Cardiac Index," but it also includes the English abbreviation "CI," which helps the reader connect the translation to the well-known medical abbreviation. In summary, if the translation is intended for a general or less specialized readership, the first translation is preferable. The second translation is preferred in highly specialized medical contexts when brevity and standard abbreviations are desired. Both are legitimate, but they serve different communicative goals and registers, demonstrating how context and audience influence translation choice.

3. The physician diagnosed the child with **DI** after noticing excessive thirst and frequent urination.

NO.	**TL text**	**Translation Technique**	**Appropriateness**
1	شخص الطبيب الطفل بمرض السكري الكاذب (Diabetes Insipidus) بعد ملاحظته العطش الشديد وكثرة التبول.	Literal & Addition	+/-
2	شخص الطبيب إصابة الطفل بمرض السكري الكاذب(DI) بعد ملاحظته العطش الشديد وكثرة التبول.	Literal & Transference	+

Discussion

The abbreviation “DI” is rendered to Arabic by text 1 literally in (السكري الكاذب), and then the abbreviation's full form is added in parentheses. The translation is semantically accurate, but less appropriate in a professional medical register because the addition of the full English form of the abbreviation is redundant for specialized readers. TL text 2 provides a literal rendering of the abbreviation's full form and then transfers the English abbreviation “ID” directly from English. This technique reflects professional authenticity and aligns with contemporary medical usage, where abbreviations are retained untranslated. This version is more appropriate for clinical or academic medical contexts.

4. The doctor advised reducing fatty foods to lower **LDL** levels and protect heart health.

NO.	**TL text**	**Translation Technique**	**Appropriateness**
1	نصح الطبيب بتقليل تناول الأطعمة الدهنية لخفض مستويات البروتين الدهني منخفض الكثافة (LDL) وحماية صحة القلب.	Literal & Transference	+
2	نصح الطبيب بتقليل تناول الأطعمة الدهنية لخفض مستويات البروتين الدهني منخفض الكثافة (LDL) وحماية صحة القلب.	Literal & Transference	+

Discussion

Both TL texts employ similar techniques, rendering Low-Density Lipoprotein into Arabic as (البروتين الدهني منخفض الكثافة) and retaining the abbreviation “LDL” unchanged. These techniques reflect scientific precision and align with medical discourse conventions. The renderings are contextually and register-appropriate, as the abbreviation “LDL” is globally standardized and understood across languages in medical communication.

5. The specialist discussed **HRT** options to help the patient manage menopausal symptoms safely.

NO.	**TL text**	**Translation Technique**	**Appropriateness**
1	ناقش الاخصائي خيارات العلاج بالهورمونات التعويضية (Hormone Replacement Therapy) لمساعدة المريض على التعامل مع أعراض انقطاع الطمث بأمان.	Literal & addition	+\-
2	ناقش الاخصائي خيارات العلاج بالهرموني التعويضي (HRT) لمساعدة المريضة على التعامل مع أعراض انقطاع الطمث بأمان	Literal & transference	+

Discussion

Text 1 employs a literal technique by providing an Arabic equivalent and then adding the full English form of the abbreviation in parentheses. While accurate and informative, this translation is still less appropriate in professional medical contexts because the addition of the full form of the abbreviation is redundant. As for TL text 2, a literal rendering is provided, and the abbreviated form is retained in Arabic. These techniques are contextually and register-appropriate, mirroring standard medical discourse. It achieves both accuracy and brevity, aligning with authentic clinical writings.

Conclusion

The comparative analysis of the Arabic translations generated by ChatGPT and Perplexity AI systems reveals that the accuracy and appropriateness of abbreviation translation are highly dependent on context and register. When abbreviations such as INR, LDL, and DI are embedded within a clearly defined medical context and guided by a specialized register, both systems tend to produce accurate and professionally acceptable renderings. In such cases, the two systems represented by TL 1 and TL 2 employ techniques like literal translation combined with addition or transference, which preserve the original referential meaning while conforming to the norms of Arabic medical discourse. These contextually grounded renderings, such as (العلاج الهرموني التعويضي) “HRT” or (البروتين منخفض الكثافة) “LDL”, reflect register awareness, terminological precision, and functional equivalence, enabling the TL reader to interpret the abbreviation correctly within the domain of use.

In contrast, when abbreviations appear in decontextualized sentences —i.e., when no linguistic, situational, or disciplinary clues signal their intended meaning —the translation systems fail to identify the correct semantic domain. Examples 1, 2, 3, 4, and 5 clearly illustrate the absence of contextual cues. Despite using almost the same translation techniques by the two AI systems as the transference of the English abbreviations to the Arabic text without interpretation, examples 1 and 4, the literal technique in examples 2 and 3, and addition in examples 1 and 5, all outputs are contextually and semantically inappropriate, showing how a lack of contextual anchoring leads to semantic distortion and loss of domain-specific meaning.

This pattern confirms that context and register are not supplementary factors but essential determinants of meaning in translation, especially when dealing with polysemous abbreviations. Context activates the correct conceptual field, such as a medical one, while register governs stylistic and terminological expectations within the professional community. When these elements are present, AI systems, like human translators, can select strategies that ensure functional adequacy and translation appropriateness. However, in their absence, translation becomes formally correct but semantically erroneous, as abbreviations lose their referential linkage and are rendered literally or arbitrarily. Consequently, the study concludes that AI systems, like human translators, must be guided by context- and register-aware modeling to achieve scientifically valid, communicatively accurate, and professionally appropriate renderings of Arabic abbreviations.

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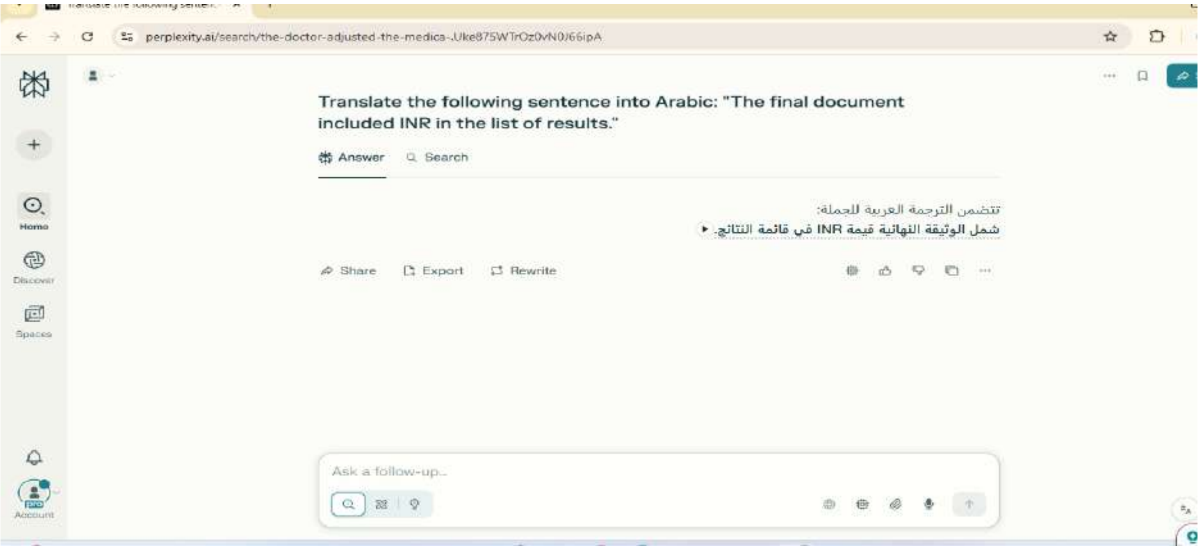
Appendix

Decontextualized Medical Abbreviations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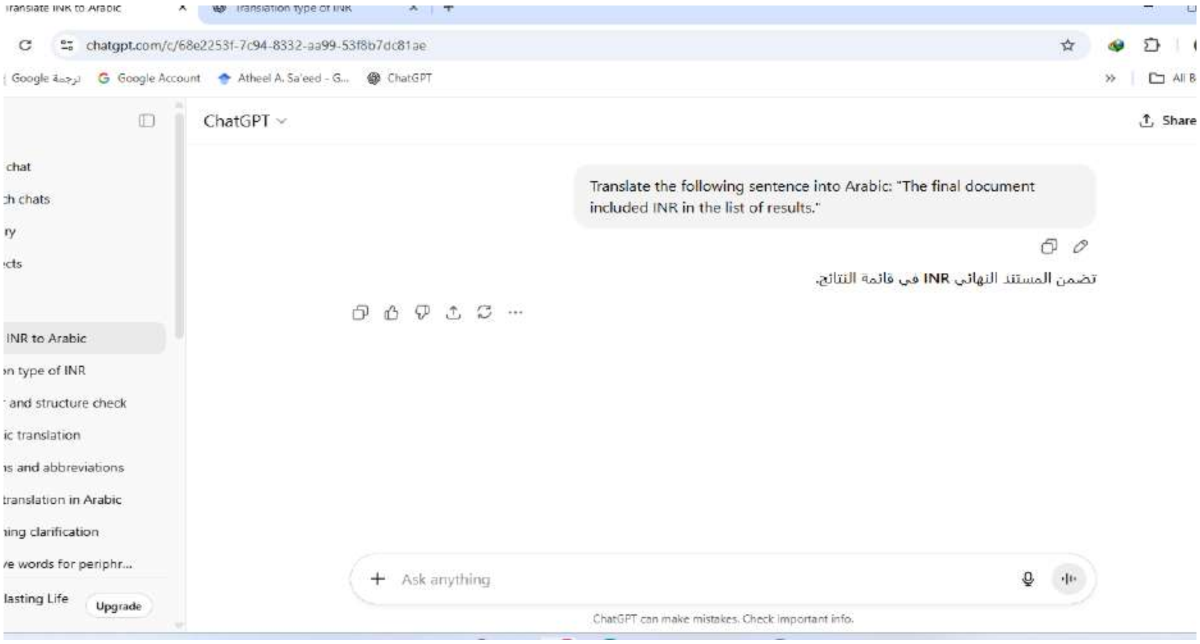
Ask a follow-up...

Translate the following sentence into Arabic: "The final document included INR in the list of results."

تتضمن الترجمة العربية للجملة:

شمل الوثيقة النهائية قيمة INR في قائمة النتائج.


Translate INR to Arabic
Translation type of INR
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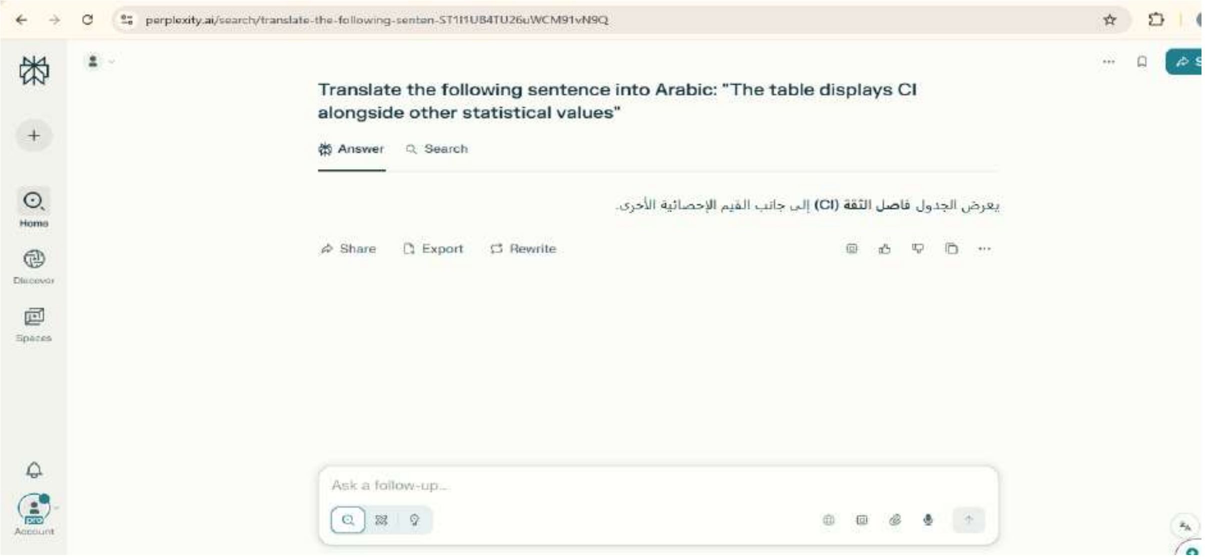
Translate the following sentence into Arabic: "The final document included INR in the list of results."

تضمن المستند النهائي INR في قائمة النتائج.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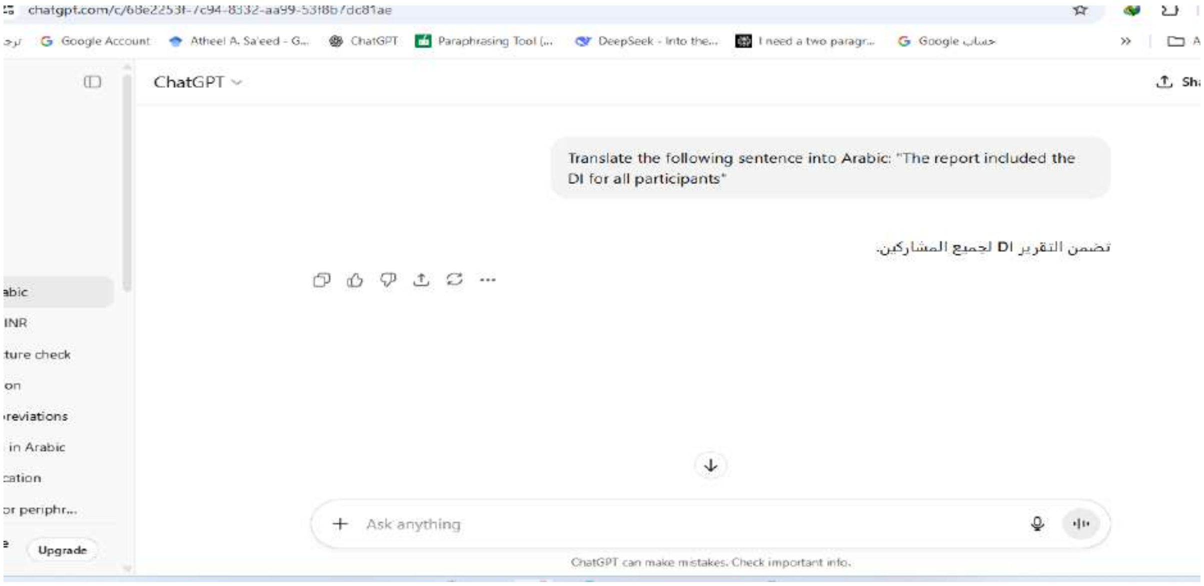
Ask a follow-up...

Translate the following sentence into Arabic: "The table displays CI alongside other statistical values"

يعرض الجدول فاصل الثقة (CI) إلى جانب القيم الإحصائية الأخرى.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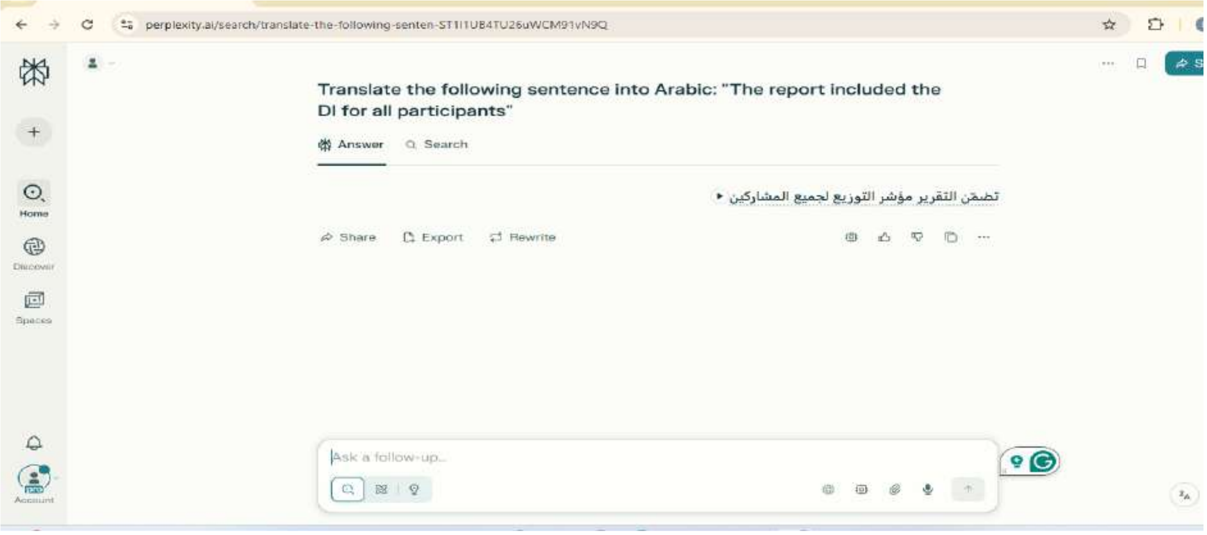
Translate the following sentence into Arabic: "The report included the DI for all participants"

تضمن التقرير DI لجميع المشاركين.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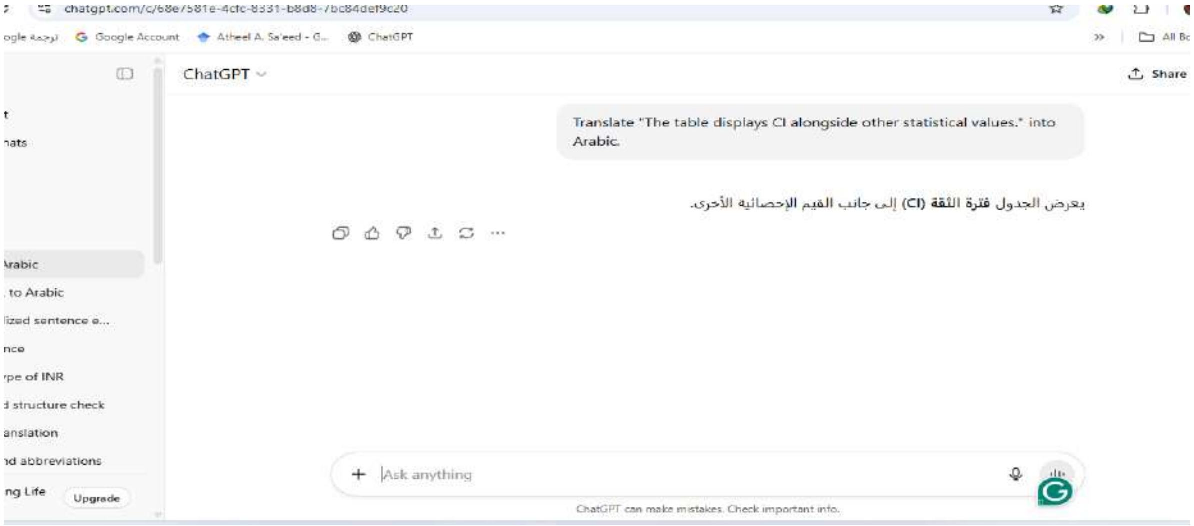
Translate the following sentence into Arabic: "The report included the DI for all participants"

تضمن التقرير مؤشر التوزيع لجميع المشاركين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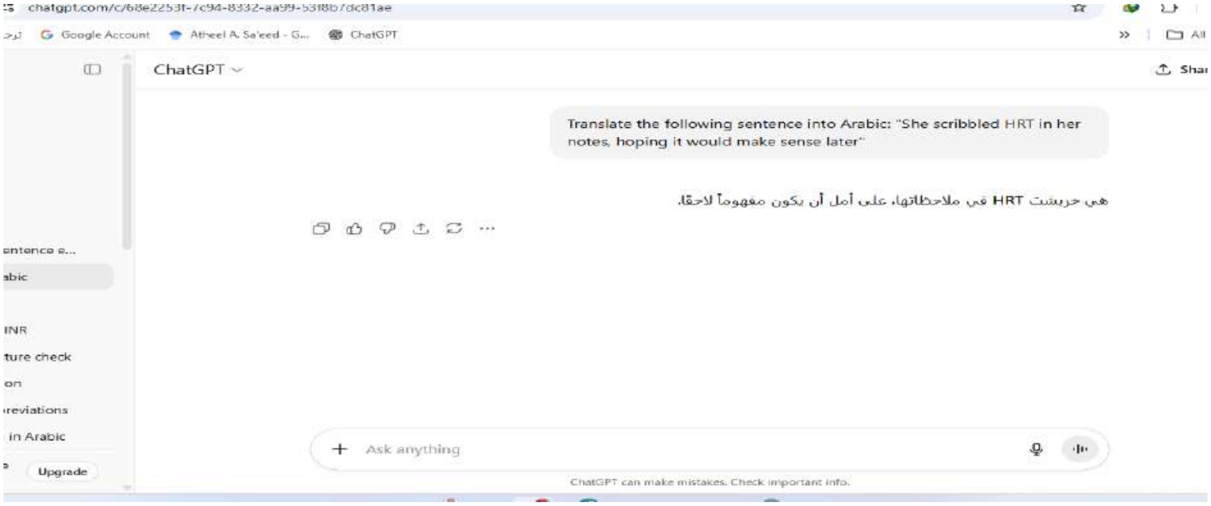
Translate "The table displays CI alongside other statistical values." into Arabic.

يعرض الجدول **فترة الثقة** (CI) إلى جانب القيم الإحصائية الأخرى.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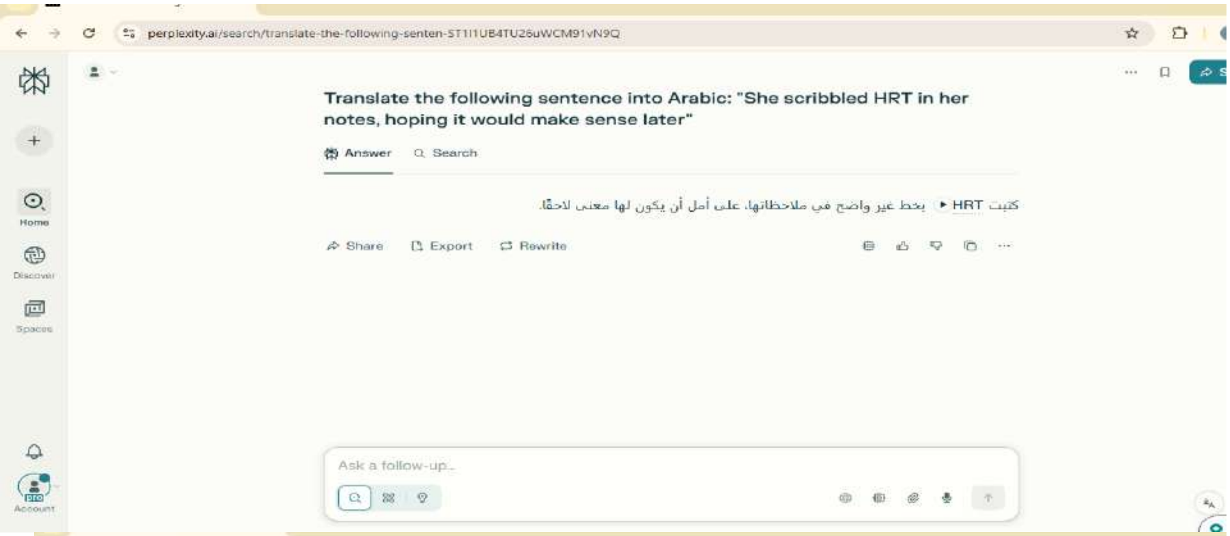
Translate the following sentence into Arabic: "She scribbled HRT in her notes, hoping it would make sense later"

هي خربشت HRT في ملاحظاتها، على أمل أن يكون مفهوماً لاحقًا.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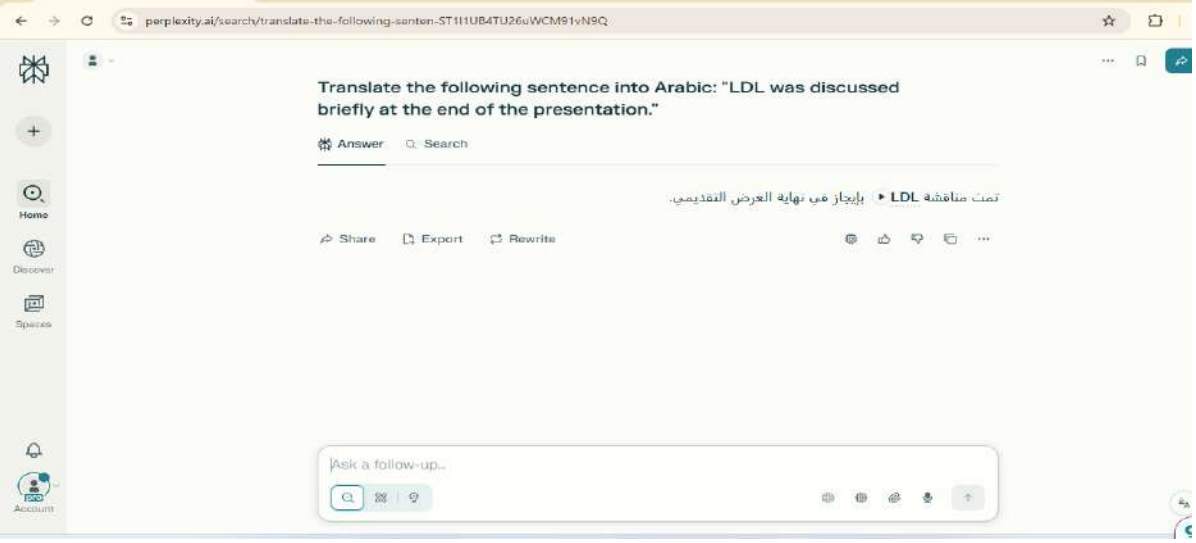
Ask a follow-up...

Translate the following sentence into Arabic: "She scribbled HRT in her notes, hoping it would make sense later"

كتبت HRT بخط غير واضح في ملاحظاتها، على أمل أن يكون لها معنى لاحقًا.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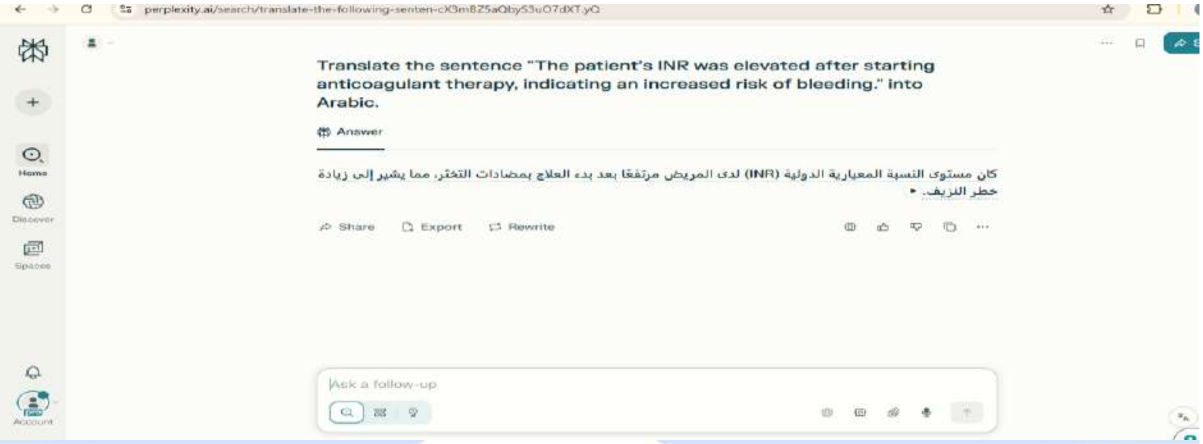
Ask a follow-up...

Translate the following sentence into Arabic: "LDL was discussed briefly at the end of the presentation."

تمت مناقشة LDL بإيجاز في نهاية العرض التقديمي.

Contextualized Medical Abbreviations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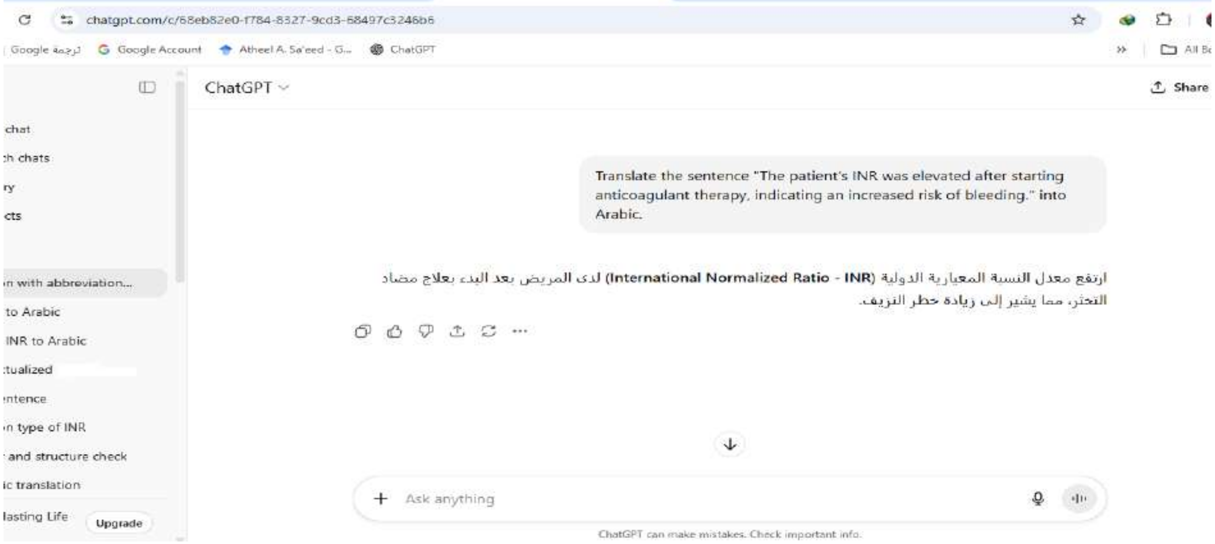
Translate the sentence "The patient's INR was elevated after starting anticoagulant therapy, indicating an increased risk of bleeding." into Arabic.

كان مستوى النسبة المعيارية الدولية (INR) لدى المريض مرتفعًا بعد بدء العلاج بمضادات التخثر، مما يشير إلى زيادة خطر النزيف.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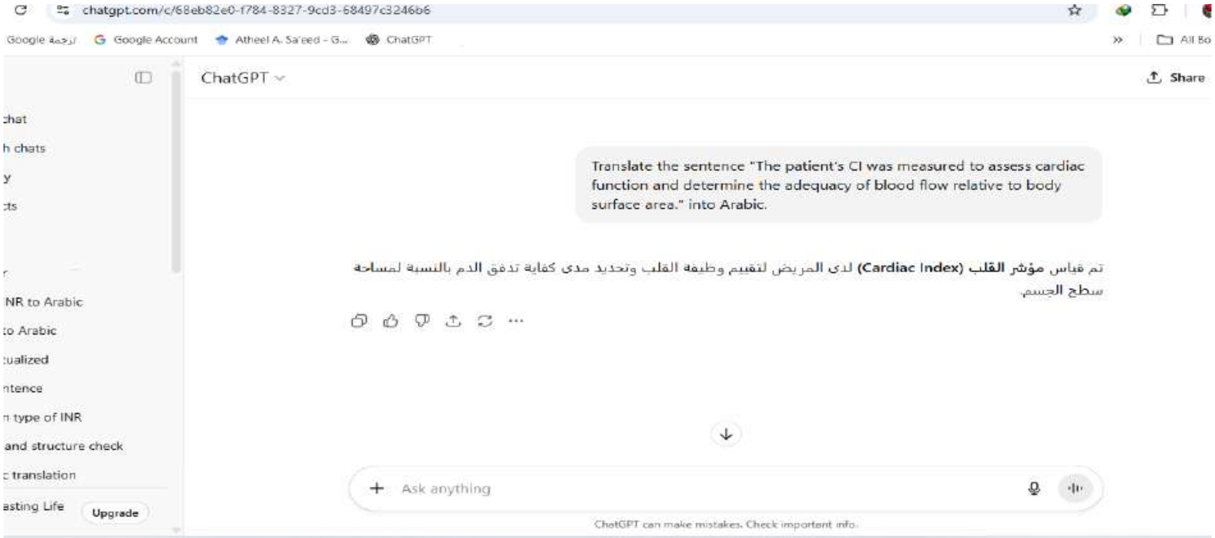
Translate the sentence "The patient's INR was elevated after starting anticoagulant therapy, indicating an increased risk of bleeding." into Arabic.

ارتفع معدل النسبة المعيارية الدولية (**International Normalized Ratio - INR**) لدى المريض بعد البدء بعلاج مضاد التخثر، مما يشير إلى زيادة خطر النزيف.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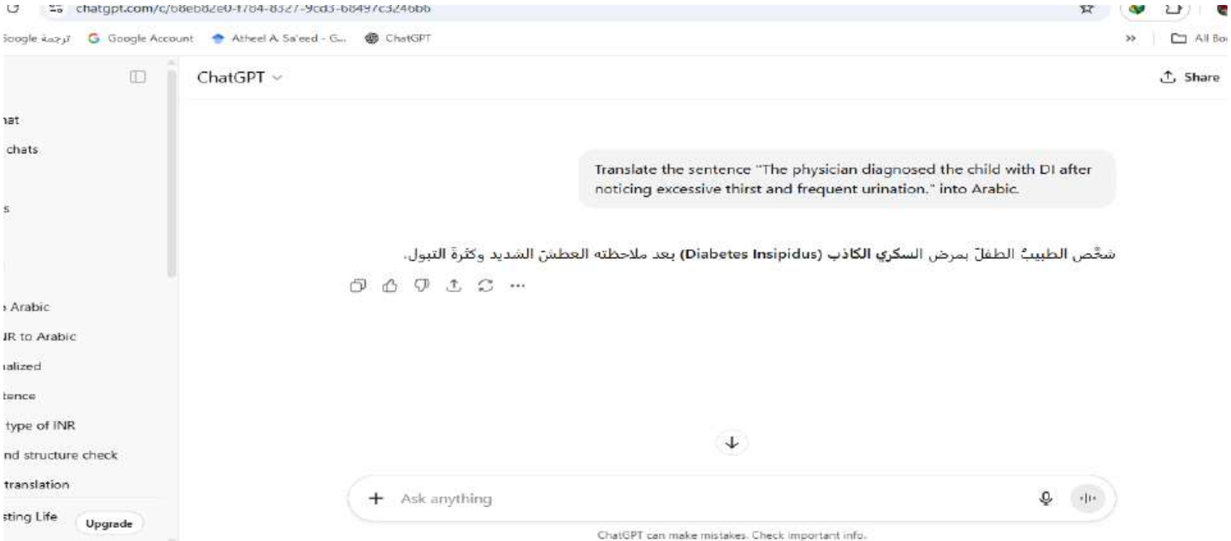
Translate the sentence "The patient's CI was measured to assess cardiac function and determine the adequacy of blood flow relative to body surface area." into Arabic.

تم قياس **مؤشر القلب (Cardiac Index)** لدى المريض لتقييم وظيفة القلب وتحديد مدى كفاية تدفق الدم بالنسبة لمساحة سطح الجسم.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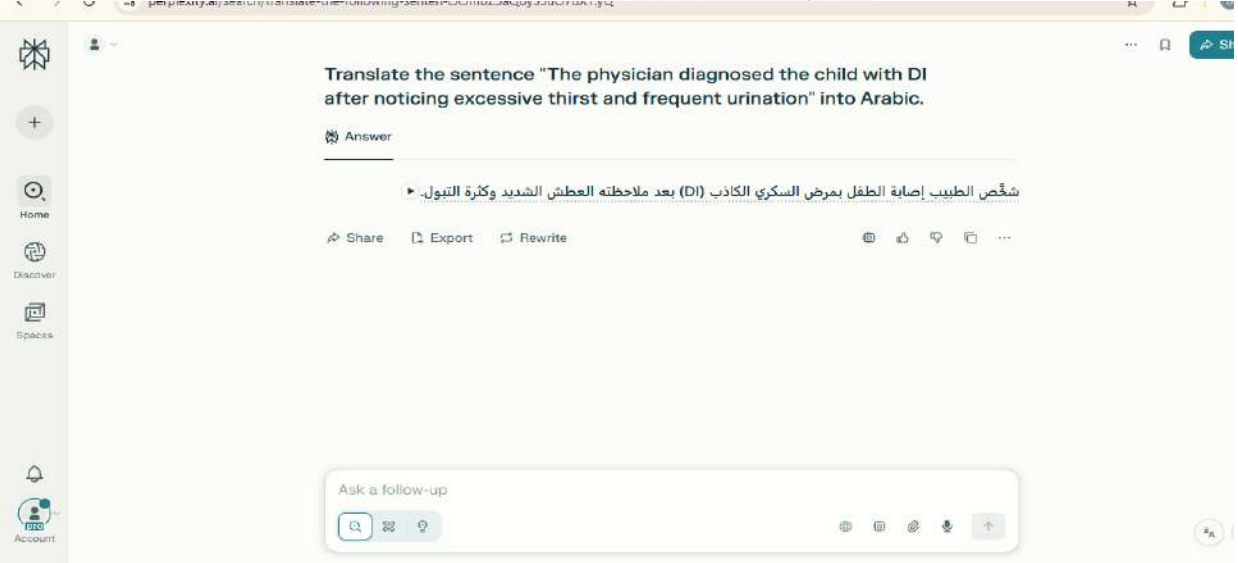
Translate the sentence "The physician diagnosed the child with DI after noticing excessive thirst and frequent urination." into Arabic.

شخّص الطبيبُ الطفلَ بمرض **السكري الكاذب (Diabetes Insipidus)** بعد ملاحظته العطشَ الشديد وكثرةَ التبول.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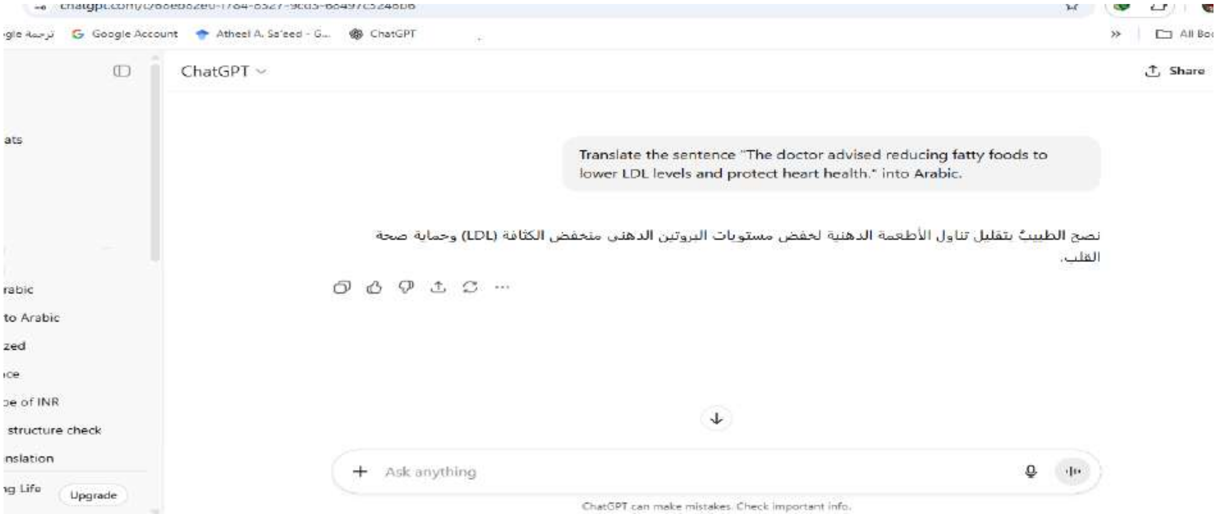
Translate the sentence "The physician diagnosed the child with DI after noticing excessive thirst and frequent urination" into Arabic.

شخّص الطبيب إصابة الطفل بمرض السكري الكاذب (DI) بعد ملاحظته العطش الشديد وكثرة التبول.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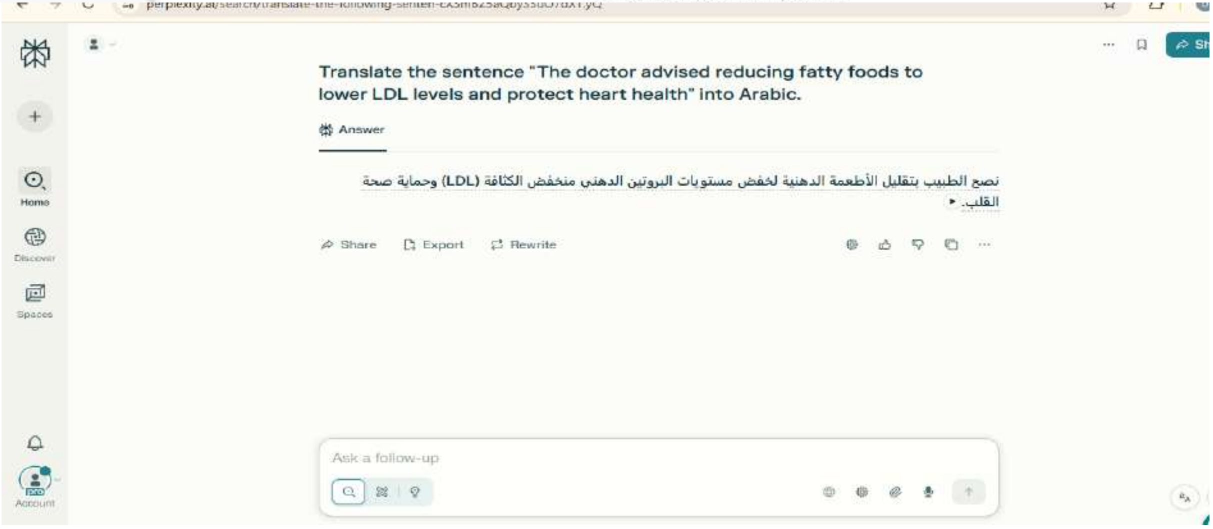
Translate the sentence "The doctor advised reducing fatty foods to lower LDL levels and protect heart health." into Arabic.

نصح الطبيبُ بتقليل تناول الأطعمة الدهنية لخفض مستويات البروتين الدهني منخفض الكثافة (LDL) وحماية صحة القلب.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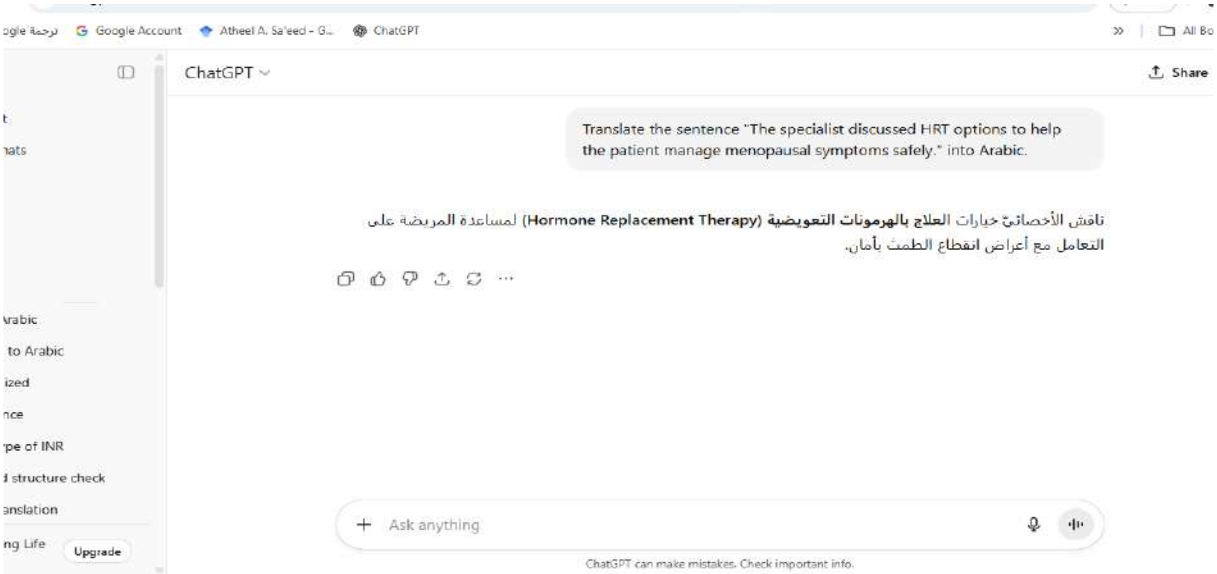
Translate the sentence "The doctor advised reducing fatty foods to lower LDL levels and protect heart health" into Arabic.

نصح الطبيب بتقليل الأطعمة الدهنية لخفض مستويات البروتين الدهني منخفض الكثافة (LDL) وحماية صحة القلب.



Translate the sentence "The specialist discussed HRT options to help the patient manage menopausal symptoms safely." into Arabic.

ناقش الأخصائيّ خيارات **العلاج بالهرمونات التعويضية (Hormone Replacement Therapy)** لمساعدة المريضة على التعامل مع أعراض انقطاع الطمث بأمان.

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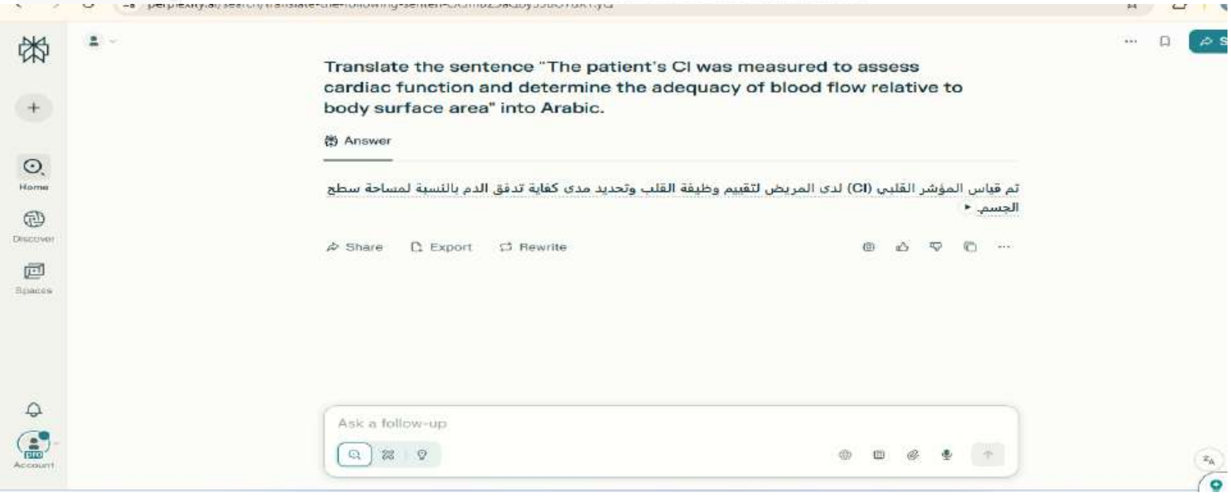

Translate the sentence "The patient's CI was measured to assess cardiac function and determine the adequacy of blood flow relative to body surface area" into Arabic.

Answer

تم قياس المؤشر القلبي (CI) لدى المريض لتقييم وظيفة القلب وتحديد مدى كفاية تدفق الدم بالنسبة لمساحة سطح الجسم.

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