

# OLÁ, EU SOU O GREGORY

UM ASSISTENTE NA INVESTIGAÇÃO EM ESCLEROSE MÚLTIPLA

[HTTPS://GREGORY-MS.COM](https://gregory-ms.com)



# BRUNO AMARAL

**COMMUNICATION STRATEGIST**

15 years of experience

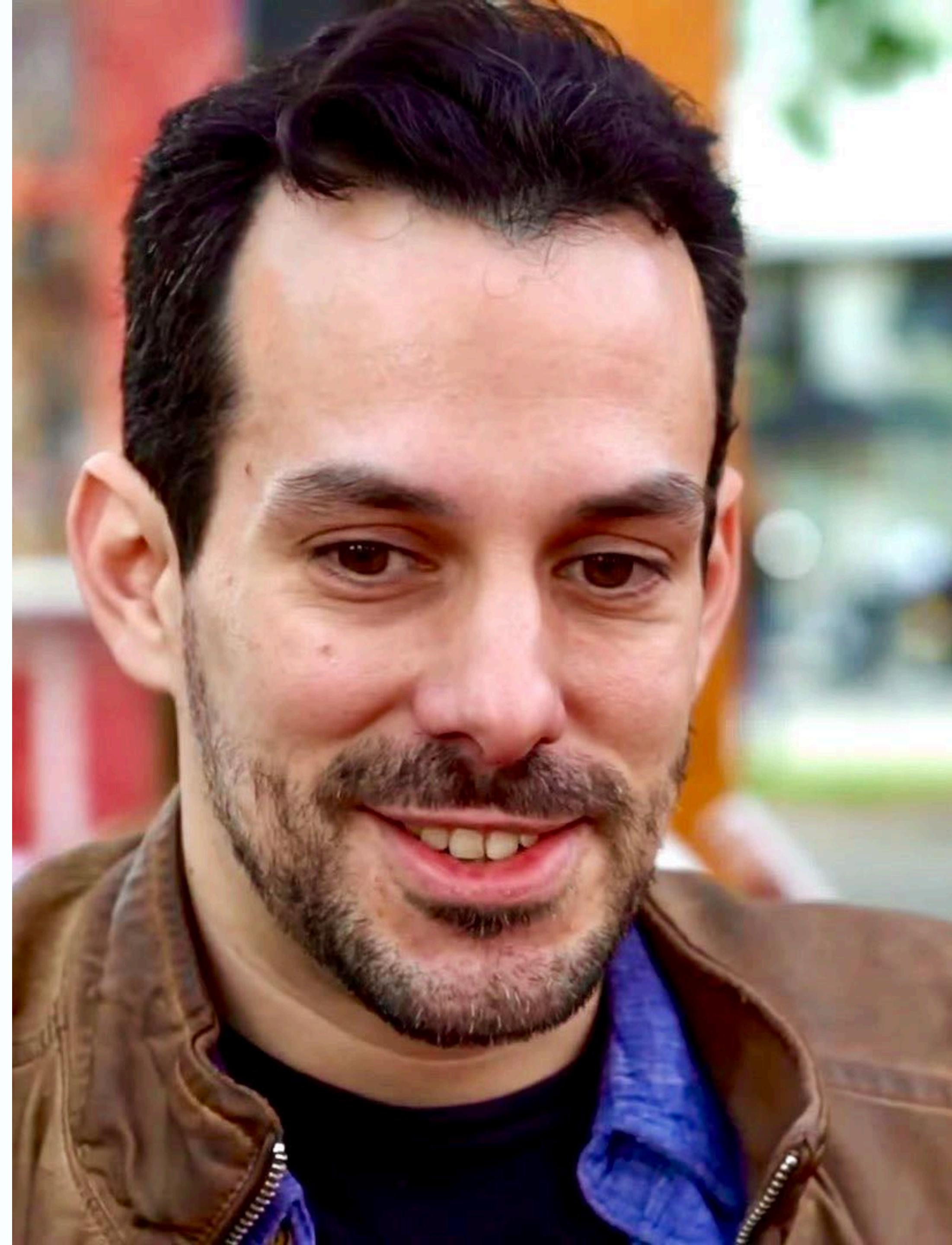
Currently working at **EDP**

Independent consultant for the **Lisbon Collective**

Teaches at the University of Lisbon

<https://brunoamaral.eu>

“ I have a very particular set of skills



# “Demasiada informação é tão mau como não ter informação suficiente”

De fevereiro a outubro de 2021, houve mais de **5.800** artigos sobre Esclerose Múltipla (EM) em publicações científicas online.

Manter uma equipa de pesquisa informada sobre as últimas descobertas seria um trabalho de tempo inteiro.

Precisamos de uma maneira de filtrar a informação relevante e distribuí-la aos públicos interessados, na esperança de que isso acelere o desenvolvimento de novos medicamentos e terapias para os pacientes.

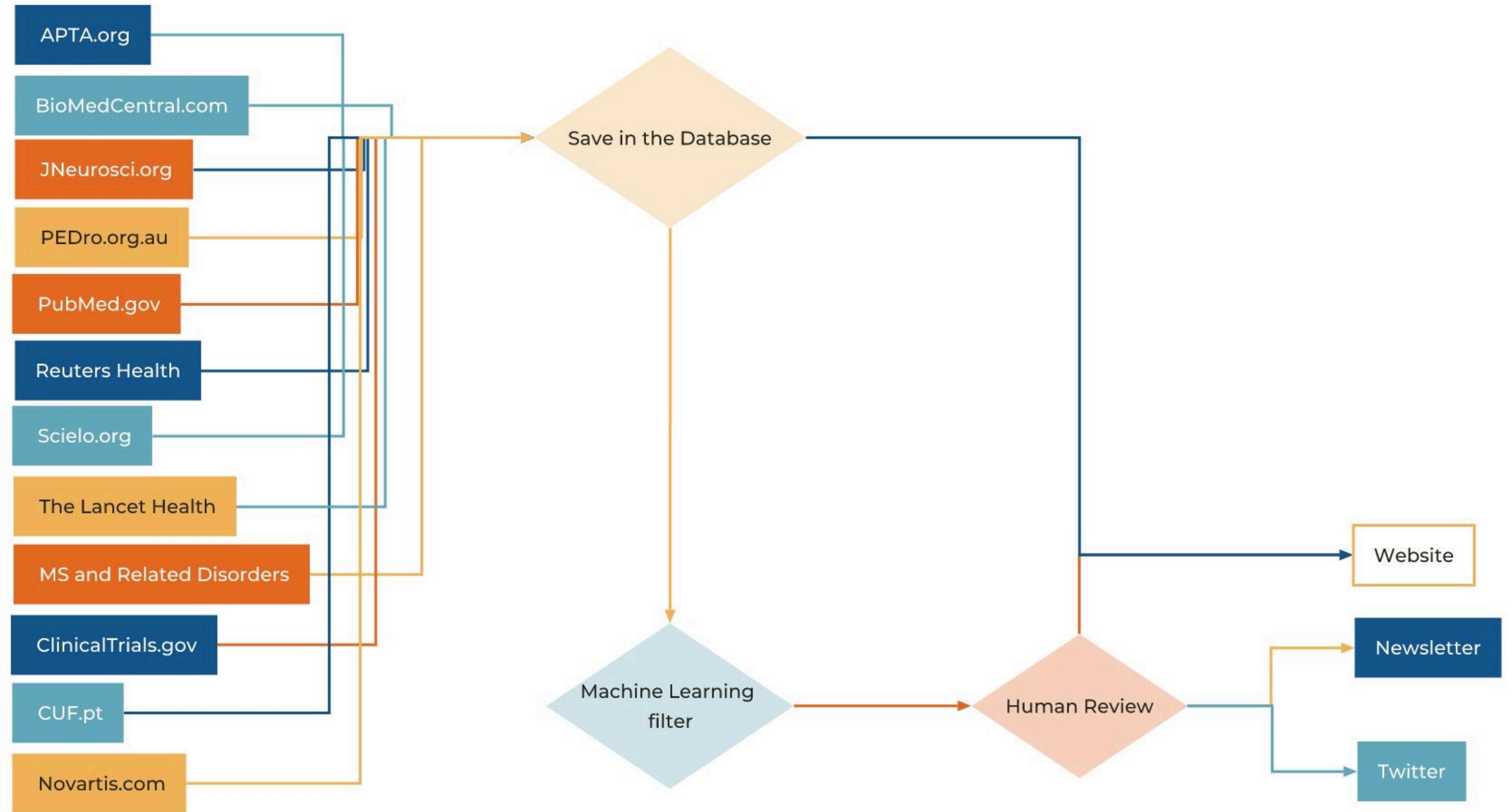


Healthcare workers



Researchers



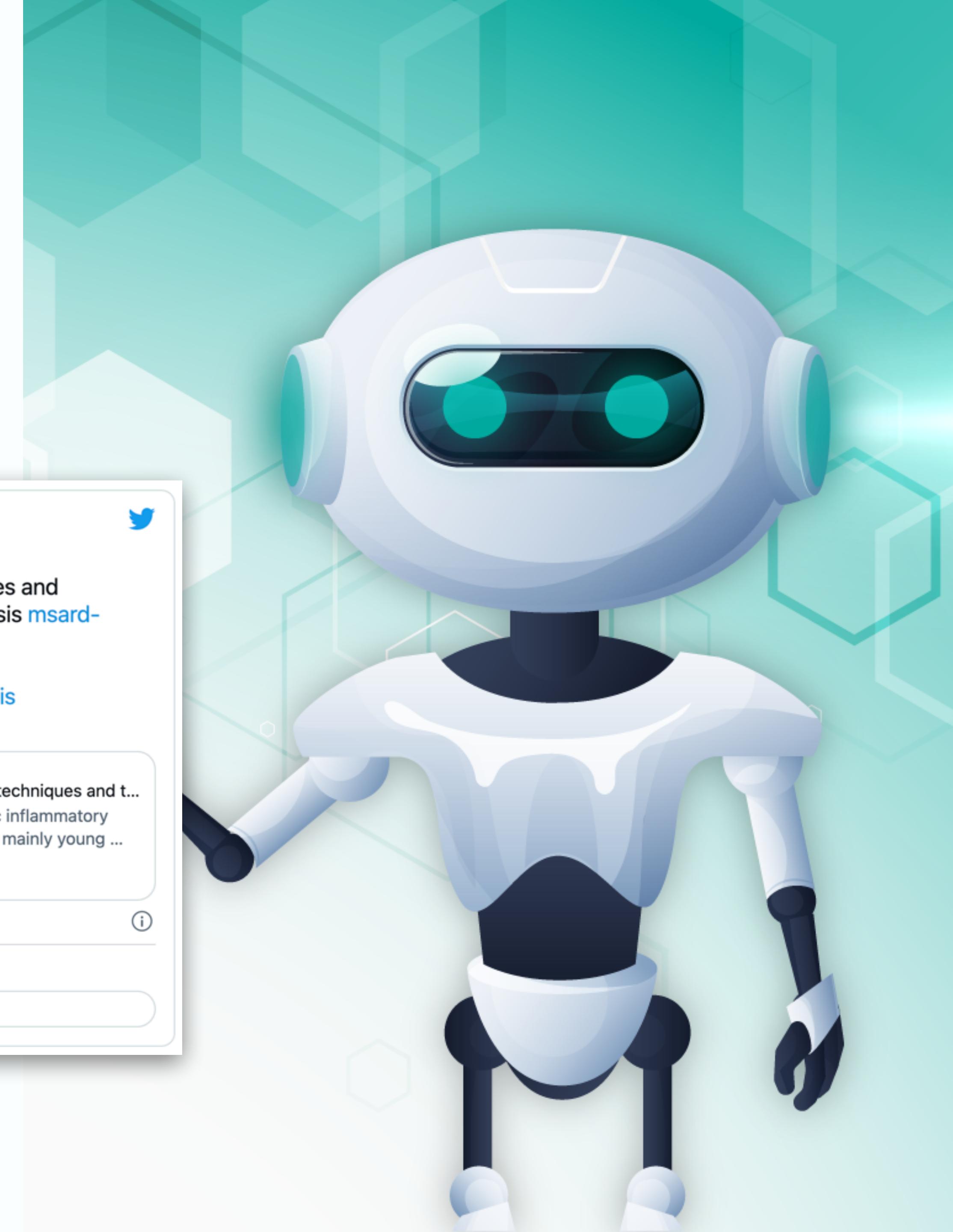
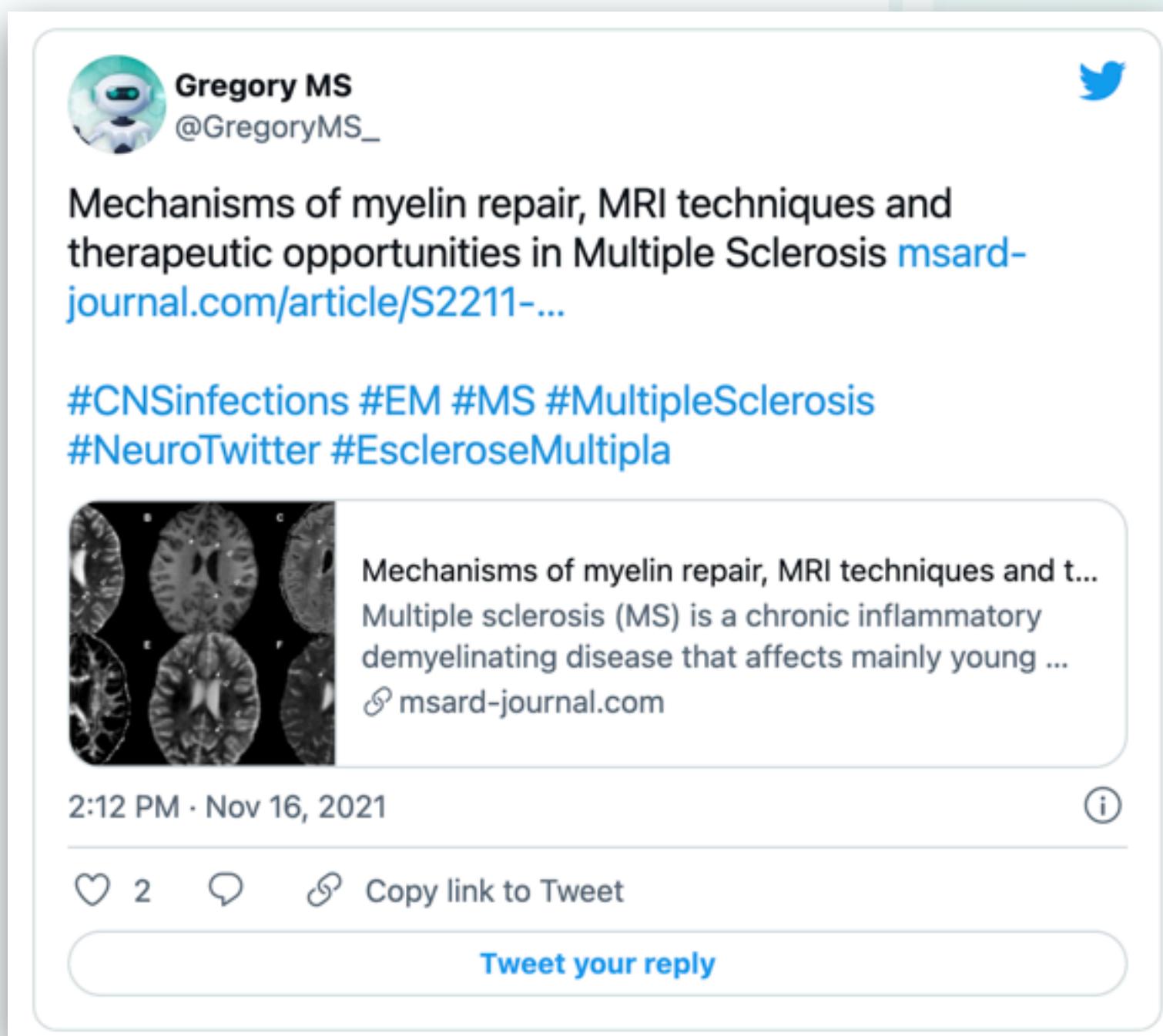


# A MISSÃO DO GREGORY

**RESOLVER O PROBLEMA DE EXCESSO  
DE INFORMAÇÃO**

Usamos **machine learning**  
para **indexar** e **filtrar**  
investigação relevante para  
Pessoas com EM (PcEM).

O site é atualizado **várias**  
**vezes ao dia** e os artigos  
relevantes são partilhados  
no Twitter.



Gregory Admin Summary

Gregory Admin Summary

Gregory  
To: Bruno Amaral

Monday, 22 Nov, 13:48

Digest of articles in the last 2 days

The effects of self-management interventions on depressive symptoms in adults with chronic physical disease(s) experiencing depressive symptomatology: a systematic review and meta-analysis

Discovery Date: 2021-11-20T14:28:12Z

- ML GNB: 0
- ML LR: 0

<https://bmcpsychotherapy.biomedcentral.com/articles/10.1186/s12888-021-03504-8>

Mark Relevant

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In vivo detection of damage in multiple sclerosis cortex and cortical lesions using NODDI

Discovery Date: 2021-11-20T15:27:43Z

- ML GNB: 0
- ML LR: 0

[https://pubmed.ncbi.nlm.nih.gov/34799405/?utm\\_source=Other&utm\\_medium=rss&utm\\_campaign=pubmed-2&utm\\_content=10guX6I3SqrhUeeLKSTD6FCRM44ewnrN2MKKTQLLPMHB4xNsZU&fc=20210216052009&ff=20211120102742&v=2.15.0](https://pubmed.ncbi.nlm.nih.gov/34799405/?utm_source=Other&utm_medium=rss&utm_campaign=pubmed-2&utm_content=10guX6I3SqrhUeeLKSTD6FCRM44ewnrN2MKKTQLLPMHB4xNsZU&fc=20210216052009&ff=20211120102742&v=2.15.0)

Mark Relevant

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Diagnosis and Management of Central Nervous System Demyelinating Disorders

Discovery Date: 2021-11-20T15:27:43Z

- ML GNB: 0
- ML LR: 0

[https://pubmed.ncbi.nlm.nih.gov/34798965/?utm\\_source=Other&utm\\_medium=rss&utm\\_campaign=pubmed-2&utm\\_content=10guX6I3SqrhUeeLKSTD6FCRM44ewnrN2MKKTQLLPMHB4xNsZU&fc=20210216052009&ff=20211120102742&v=2.15.0](https://pubmed.ncbi.nlm.nih.gov/34798965/?utm_source=Other&utm_medium=rss&utm_campaign=pubmed-2&utm_content=10guX6I3SqrhUeeLKSTD6FCRM44ewnrN2MKKTQLLPMHB4xNsZU&fc=20210216052009&ff=20211120102742&v=2.15.0)

O admin recebe um email a cada 48h com os artigos encontrados, para poder indicar os que são relevantes.

Gregory Weekly Summary

Gregory Weekly Summary

Gregory  
To: Bruno Amaral

Tuesday, 16 Nov, 08:00

Good Morning, Bruno.

Here are the relevant articles we have found in the last 7 days

**Real-world application of autologous hematopoietic stem cell transplantation in 507 patients with multiple sclerosis**

**Discovery Date:** 2021-10-11T23:06:14Z

[https://pubmed.ncbi.nlm.nih.gov/34633525/?utm\\_source=Other&utm\\_medium=rss&utm\\_campaign=pubmed-2&utm\\_content=10guX6I3SqrM44ewnrN2MKKTQLLPMHB4xNsZU&fc=20210216052009&ff=20211011190614&v=2.15.0](https://pubmed.ncbi.nlm.nih.gov/34633525/?utm_source=Other&utm_medium=rss&utm_campaign=pubmed-2&utm_content=10guX6I3SqrM44ewnrN2MKKTQLLPMHB4xNsZU&fc=20210216052009&ff=20211011190614&v=2.15.0)

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**Effects of Mesenchymal Stem Cell-Derived Exosomes on Autoimmune Diseases**

**Discovery Date:** 2021-10-14T18:49:14Z

[https://pubmed.ncbi.nlm.nih.gov/34646275/?utm\\_source=Other&utm\\_medium=rss&utm\\_campaign=pubmed-2&utm\\_content=10guX6I3SqrM44ewnrN2MKKTQLLPMHB4xNsZU&fc=20210216052009&ff=20211014144913&v=2.15.0](https://pubmed.ncbi.nlm.nih.gov/34646275/?utm_source=Other&utm_medium=rss&utm_campaign=pubmed-2&utm_content=10guX6I3SqrM44ewnrN2MKKTQLLPMHB4xNsZU&fc=20210216052009&ff=20211014144913&v=2.15.0)

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**Exosomes derived from bone marrow mesenchymal stromal cells promote remyelination and reduce neuroinflammation in the demyelinating central nervous system**

**Discovery Date:** 2021-10-16T18:49:14Z

<https://pubmed.ncbi.nlm.nih.gov/34653510/>

Os subscriptores recebem um email onde estão compilados os artigos relevantes dos últimos 7 dias.

Gregory MS

localhost:1313

GREGORY MS HOME DOCTORS RESEARCHERS PHYSICAL THERAPISTS PATIENTS DEVELOPERS CLINICAL TRIALS OBSERVATORY ARTICLES

## Relevant articles

Labels: SOURCES HUMAN SELECTION AUTOMATIC SELECTION

1 2 3 ... 20 » »»

**Blocking Kallikrein 6 promotes developmental myelination**

Glia. 2021 Oct 9. doi:10.1002/glia.24100. Online ahead of print. ABSTRACT Kallikrein related peptidase 6 (Klk6) is a secreted serine protease highly expressed in oligodendrocytes and implicated in multiple sclerosis (MS) pathophysiology. To ... Continue Reading

October 9, 2021 PUBMED HUMAN

**Tofacitinib enhances remyelination and improves myelin integrity in cuprizone-induced mice**

Immunopharmacol Immunotoxicol. 2021 Oct 7:1-9. doi:10.1080/08923973.2021.1986063. Online ahead of print. ABSTRACT AIM: Demyelination and subsequent remyelination are well-known mechanisms in multiple sclerosis (MS) pathology. ... Continue Reading

October 8, 2021 PUBMED HUMAN

Nobiletin suppresses the development of experimental autoimmune encephalomyelitis mediated by modulation of T helper 17 cell

Os artigos relevantes são apresentados na *Homepage*.

Gregory MS

localhost:1313

GREGORY MS

HOME DOCTORS RESEARCHERS PHYSICIANS NURSES PHYSICAL THERAPISTS PATIENTS

ARTICLES

Labels: SOURCES HUMAN SELECTION AUTOMATIC SELECTION

Blocking Kallikrein

Glia. 2021 Oct 9. doi: 10.1002/glia.25956. Kallikrein 6 (Klk6) is a secreted serine protease that has been implicated in various physiological and pathological conditions. To ... Continue Reading

October 9, 2021 PUBMED HUMAN

Tofacitinib enhances remyelination in cuprizone-induced mice

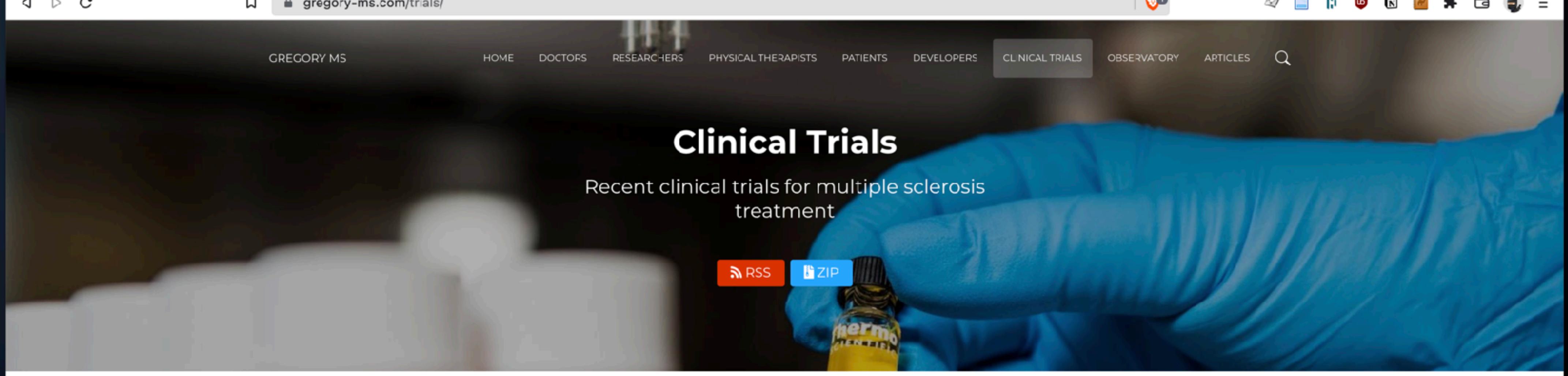
Immunopharmacol Immunotoxicol. 2021 Oct 7:1-9. doi: 10.1080/08982633.2021.66063. Original Article. ABSTRACT AIM: Demyelination and subsequent remyelination are well-known mechanisms of multiple sclerosis (MS) pathology. ... Continue Reading

October 8, 2021 PUBMED HUMAN

Nobiletin suppresses the development of experimental autoimmune encephalomyelitis mediated by modulation of T helper 17 cell

1 2 3 ... 20 »

A relevância é detectada automaticamente por machine learning e também selecção humana.



**Clinical Trials**

Recent clinical trials for multiple sclerosis treatment

[RSS](#)  [ZIP](#)

Information on Clinical Trials is retrieved from the following websites.

[CUF](#) [ClinicalTrials.gov](#) [Novartis](#)

To filter clinical trials by source visit the sources page →

November 22, 2021

Improving Prospective Memory Via Telehealth

[Read more](#)

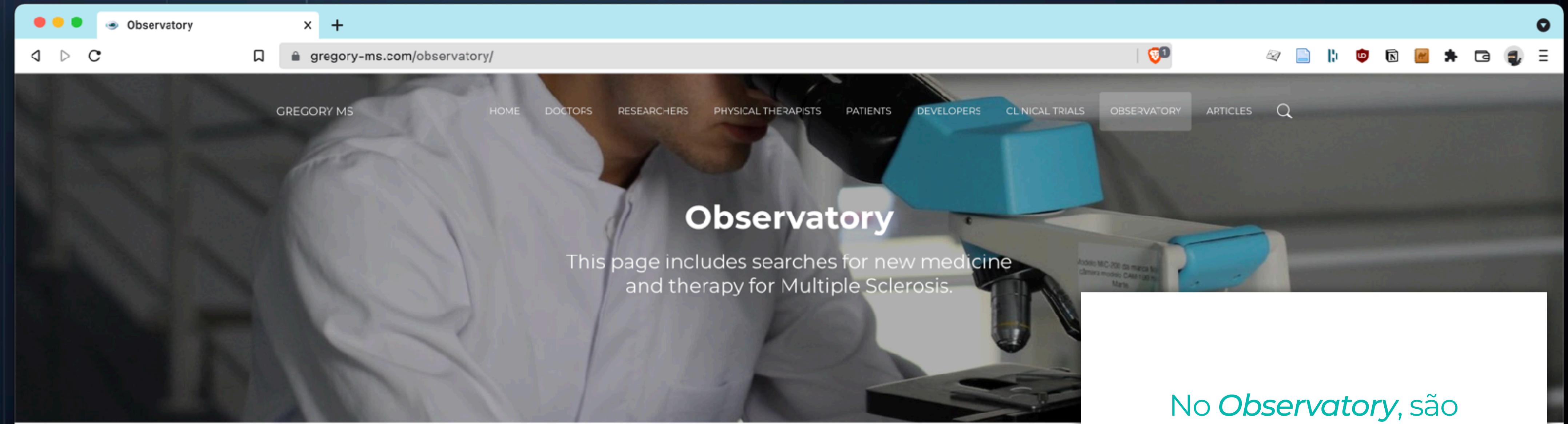
November 18, 2021

A Health Action Process Approach Online Intervention for People With Multiple Sclerosis

[Read more](#)

November 18, 2021

November 17, 2021



# Observatory

This page includes searches for new medicine and therapy for Multiple Sclerosis.

Most of the therapies listed were identified by the [MS Society](#) as relevant, others were added based on Google Scholar. In each section we list the published articles and any clinical trials that include the new drug in the title. If the relevancy of the new drug didn't come from the MS Society, we also mention it in the page.s

October 26, 2021

Covid-19

[Read more](#)

by **Bruno Amaral**,

August 31, 2021

Tolebrutinib

[Read more](#)

October 15, 2021

HSCT

[Read more](#)

by **Bruno Amaral**,

August 17, 2021

Cladribine

[Read more](#)

No **Observatory**, são compilados os artigos que têm no título um termo ou fármaco específico.

Metformin

gregory-ms.com/observatory/metformin/

GREGORY MS HOME DOCTORS RESEARCHERS PHYSICAL THERAPISTS PATIENTS DEVELOPERS CLINICAL TRIALS OBSERVATORY ARTICLES

August 14, 2021 | 1 min read

## Metformin

1. Metformin Protects Myelin from Degeneration in A Mouse Model of lysophosphatidylcholine Induced Demyelination in The Optic Chiasm [pubmed](#)
2. Metformin ameliorates the severity of experimental Alport syndrome [pubmed](#)
3. Metformin Reverses Hashimoto's Thyroiditis by Regulating Key Immune Events [pubmed](#)
4. Comparative assessment of in vitro BBB tight junction integrity following exposure to cigarette smoke and e-cigarette vapor: a quantitative evaluation of the protective effects of metformin using small-molecular-weight paracellular markers [BioMedCentral](#)
5. Inhibition of mTORC1 through ATF4-induced REDD1 and Sestrin2 expression by Metformin [BioMedCentral](#)
6. Evaluation of the effects of metformin as adenosine monophosphate-activated protein kinase activator on spatial learning and memory in a rat model of multiple sclerosis disease [pubmed](#)
7. Metformin Therapy Attenuates Pro-inflammatory Microglia by Inhibiting NF-kappaB in Cuprizone Demyelinating Mouse Model of Multiple Sclerosis [pubmed](#)

### Clinical Trials

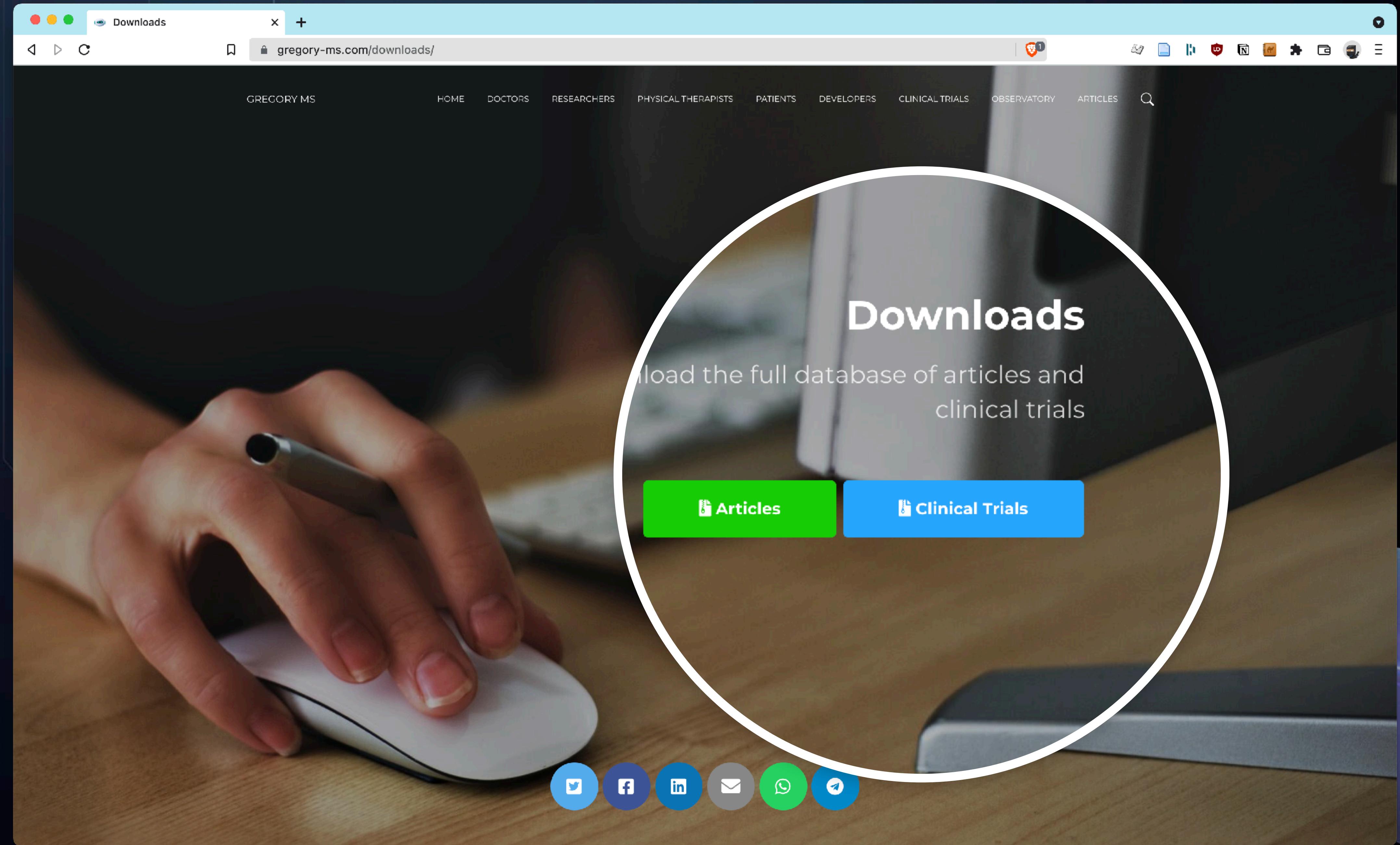
Em cada página listamos os artigos e os ensaios clínicos associados.

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0 comments

Share:

0



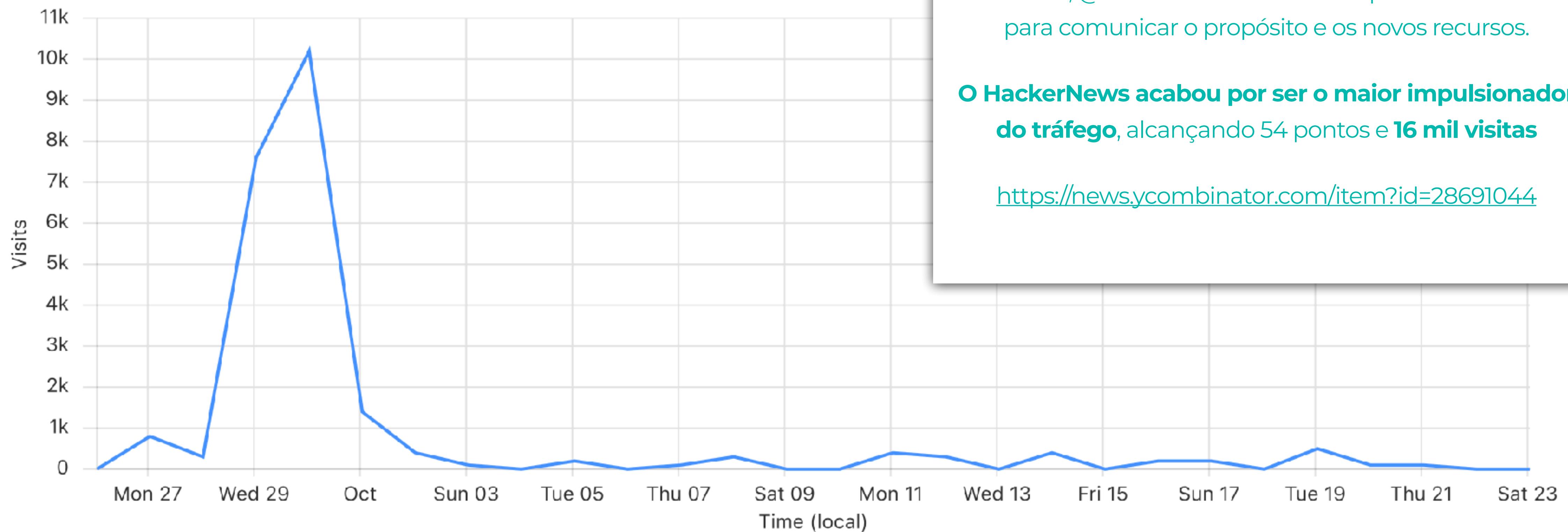
# RESULTADOS ATÉ AGORA

- **0€** budget
- **1** membro de equipa
- **1** robot amigável
- Mais de **120** visitas por dia
- **79** followers no Twitter
- **4** subscriptores da newsletter semanal
- Um pico de **16 000** visitas quando lançámos a versão 2 no dia 29 de Setembro
- **5 916** artigos recolhidos entre Fevereiro e Outubro
- **336** ensaios clínicos
- 



Total visits

**23.6k**



**27 de setembro**, Gregory v2 foi lançado e, pela primeira vez, compartilhado nas mídias sociais relevantes.

No Twitter, @brunoamaral ativou um plano de conteúdo para comunicar o propósito e os novos recursos.

**O HackerNews acabou por ser o maior impulsionador do tráfego**, alcançando 54 pontos e **16 mil visitas**

<https://news.ycombinator.com/item?id=28691044>

**Source:** CloudFlare Analytics Sep 27th 2021 00:00 (UTC +01:00) > Oct 23rd 2021 23:59 (UTC +01:00)

# NÃO É UMA ESTRADA FÁCIL

**A VISÃO DO GREGORY É CONSEGUIR MONITORIZAR E AUXILIAR A PESQUISA DO INÍCIO AO FIM**

1. Encontrar artigos à medida que são publicados ●
2. Identificar artigos relevantes para melhorar a Qualidade de Vida (QV) ou atenuar os sintomas ●
3. Monitorizar novas terapias no observatório ●
4. Enviar um boletim informativo gratuito para os públicos relevantes ●
5. Informar sobre ensaios clínicos relacionados ●
6. Permitir que todos naveguem e analisem a base de dados ●

## **7. Divulgação de ensaios clínicos em Portugal**

8. Monitorizar a aceitação de novas terapias e medicamentos
9. Ajudar investigadores a otimizar os seus esforços

● Completo

● Em andamento ou incompleto

■ Próximas etapas



# “OLÁ” É A PALAVRA MAIS DIFÍCIL

## APRESENTAR O GREGORY À COMUNIDADE MÉDICA

### 1. Campanha de relações públicas online

Procurar e contactar profissionais relevantes

### 2. Plano de Social Media no Twitter

Participação persistente e coerente nas hashtags relevantes.

#CNSinfections #EM #MS #MultipleSclerosis #NeuroTwitter

#EscleroseMultipla

### 3. Aproveitar o algoritmo do Twitter

O tempo é escasso, o Gregory segue apenas *stakeholders* relevantes, e assim o Twitter envia recomendações para seguir contas semelhantes.

### 4. *Community Outreach*

Do Reddit ao Telegram, apresentamos o Gregory às comunidades online que são relevantes para EM.



# DAR O LITRO

## SUBIR A FASQUIA DO NOSSO PLANO DE COMUNICAÇÃO

### 1. Encontrar aliados em Portugal e no estrangeiro

Instituições médicas, grupos de apoio de EM, associações. A rede deles é um recurso valioso para apresentar o Gregory aos públicos relevantes.

### 2. Acrescentar fontes de informação

INFARMED, European Medicines Agency

### 3. Contacto com autores relevantes

Às vezes, o Gregory encontra artigos sobre o uso de *Machine Learning*, Inteligência Artificial e tecnologias semelhantes para pesquisar EM. Quando isso acontece, enviamos um e-mail de apresentação ao autor do artigo.

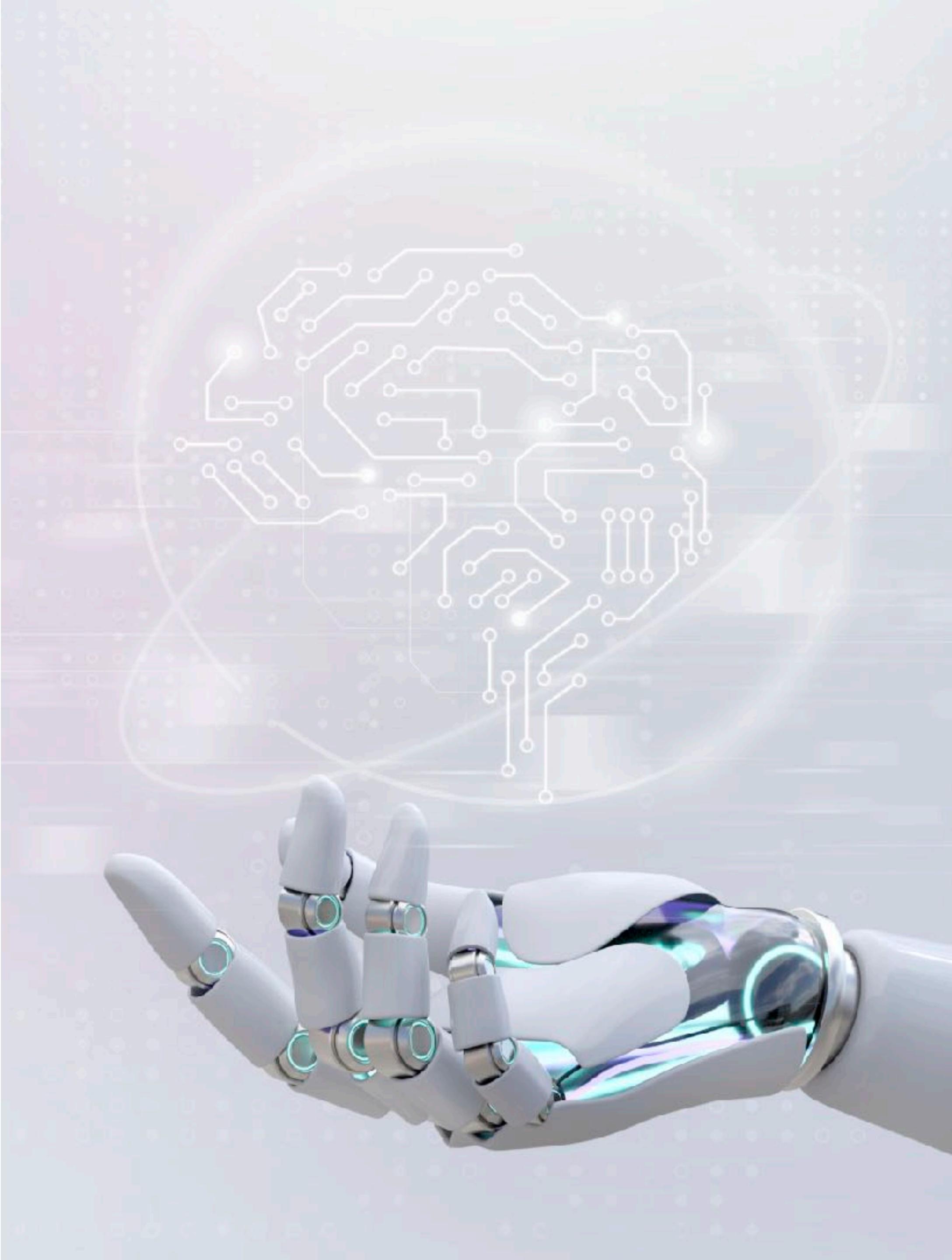


# ALIADOS

- **Sociedade Portuguesa de Esclerose Múltipla (SPEM)**
- **One Over Zero Labs**, consultoria e apoio moral  
António Lopes, Artur Ventura, Carlos Morgado, João Neves, Luís Correia, Miguel Duarte, Pedro Melo, Rui Carmo, et al.
- **Margarida Gomes**, Design e ilustração  
<https://margaridagomes.com/>
- **CloudFlare** (CF), prestação de serviço ao apoio do Project Galileo



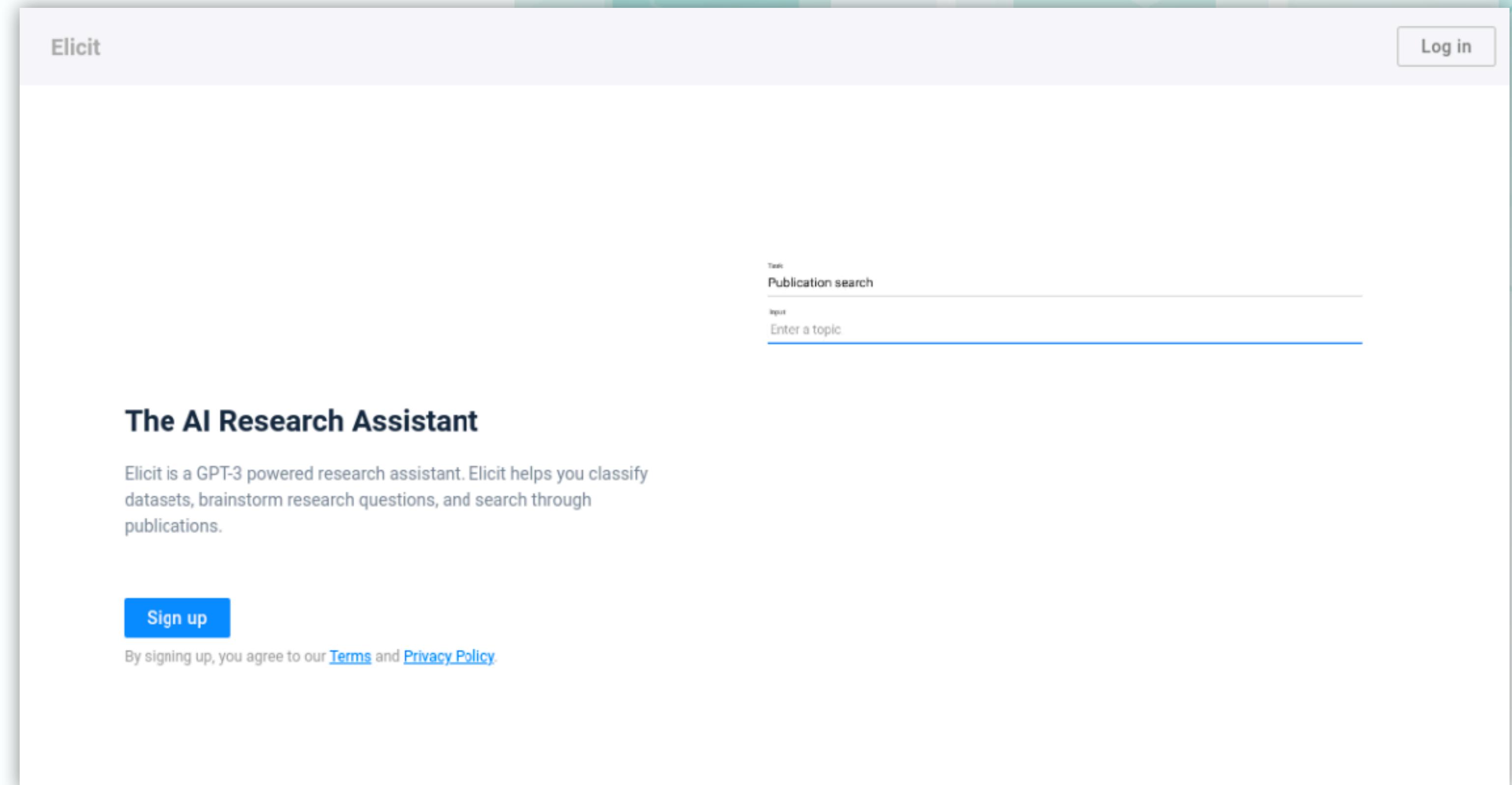
Powered by  
**Project Galileo**



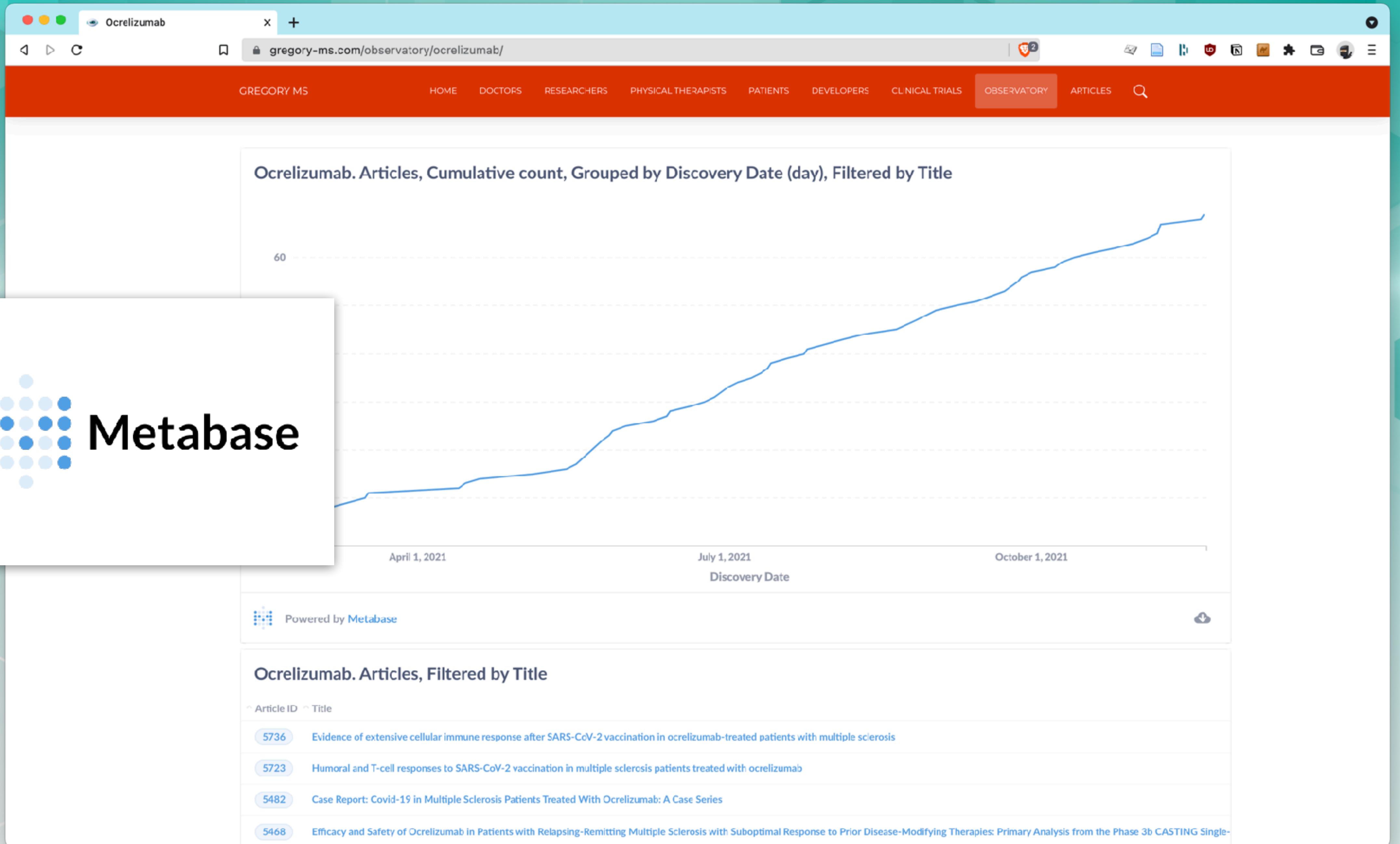
# SOLUÇÕES SEMELHANTES

[elicit.org](#)

Elicit é um assistente de pesquisa com GPT-3. Elicit ajuda a classificar conjuntos de dados, debater questões de pesquisa e pesquisar publicações.



The screenshot shows the Elicit AI Research Assistant interface. At the top, there's a navigation bar with the word "Elicit" on the left and a "Log in" button on the right. Below the navigation bar, the main area has a light gray header with the text "Task: Publication search". Underneath this, there's a text input field with the placeholder "Enter a topic". In the center of the page, the title "The AI Research Assistant" is displayed in bold. Below the title, a descriptive paragraph reads: "Elicit is a GPT-3 powered research assistant. Elicit helps you classify datasets, brainstorm research questions, and search through publications." At the bottom of the main content area, there's a blue "Sign up" button. Below the button, a small note states: "By signing up, you agree to our [Terms](#) and [Privacy Policy](#)".



Ocrelizumab · Dashboard · Metabase · +

metabase.gregory-ms.com/dashboard/2-ocrelizumab

Search... Ask a question

## Ocrelizumab

Ouranalytics • Edited a few seconds ago by you

Ocrelizumab chart. Articles, Cumulative count, Grouped by Discovery Date

Articles Relevant article Non Relevant articles

Count

Discovery Date

Ocrelizumab by source

MS & Rel. Disorders  
Sage Pub  
The Lancet  
pubmed  
Other

71 TOTAL

Table of Articles, Count, Grouped by Article and Link and Relevant and Title, Filtered by Ocrelizumab

Article ID Title

- 5869 Longitudinal humoral response after SARS-CoV-2 vaccination in ocrelizumab treated MS patients: To wait and repopulate?
- 5768 Longitudinal humoral response after SARS-CoV-2 vaccination in ocrelizumab treated MS patients: to wait and repopulate?
- 5736 Evidence of extensive cellular immune response after SARS-CoV-2 vaccination in ocrelizumab-treated patients with multiple sclerosis
- 5723 Humoral and T-cell responses to SARS-CoV-2 vaccination in multiple sclerosis patients treated with ocrelizumab
- 5482 Case Report: Covid-19 in Multiple Sclerosis Patients Treated With Ocrelizumab: A Case Series
- 5468 Efficacy and Safety of Ocrelizumab in Patients with Relapsing-Remitting Multiple Sclerosis with Suboptimal Response to Prior Disease

Rows 1-6 of 71

Articles, Filtered by Ocrelizumab and Relevant

Article ID Title

- 2425 Ocrelizumab after natalizumab in JC-virus positive relapsing remitting multiple sclerosis patients
- 2774 Serological response to SARS-CoV-2 vaccination in multiple sclerosis patients treated with fingolimod or ocrelizumab: an initial real-life study
- 3058 Case Report: Successful Stabilization of Marburg Variant Multiple Sclerosis With Ocrelizumab Following High-Dose Cyclophosphamide
- 3728 Ocrelizumab treatment for relapsing-remitting multiple sclerosis after a suboptimal response to previous disease-modifying therapy: a case report
- 3931 T-cell responses to SARS-CoV-2 in multiple sclerosis patients treated with ocrelizumab healed from COVID-19 with absent or low antibody titers
- 4546 Predictors of Ocrelizumab Effectiveness in Patients with Multiple Sclerosis



Para os participantes da conferência estamos a oferecer  
**acesso privilegiado** ao módulo **Metabase**.

Este acesso vai permitir explorar os dados em tempo real.

Pode pedir o acesso através do email [bruno@gregory-ms.com](mailto:bruno@gregory-ms.com)



**HTTPS://GREGORY-MS.COM**

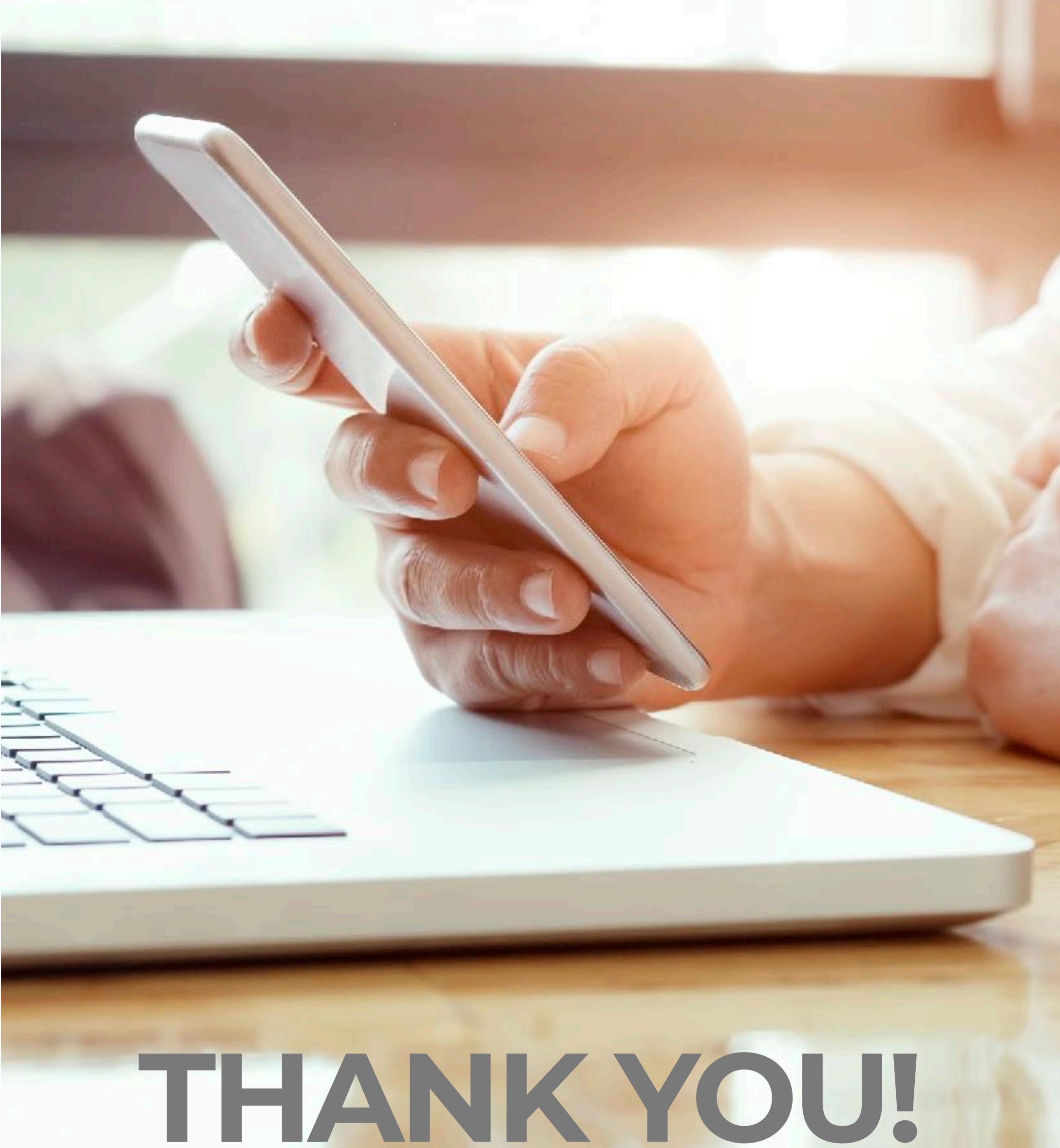
# CONTACTS

## BRUNO AMARAL

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- 🐦 <https://twitter.com/brunoamaral>
- 📞 +351 912 875 856

## WEB PLATFORM

<https://gregory-ms.com>



THANK YOU!