



InSyBio

Intelligent Systems Biology

User Manual

# InSyBio Precision Chronic Pain Treatment Tool: a first-of-its-kind tool for personalizing treatment of chronic pain patients

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Insybio Pain Tool v1.0

[www.insybio.com](http://www.insybio.com)

# InSyBio Precision Chronic Pain Treatment Tool

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## Introduction

InSyBio Precision Chronic Pain Treatment Tool is a first-of-its-kind tool that is able to stratify chronic pain patients into individuals who will benefit from topical analgesics treatment and select the most suitable non-opioid treatment formulation for them using as input a combination of demographics, clinical characteristics and other responses to a simple questionnaire.

The first version of this tool is available for a free trial usage by clinicians treating Chronic pain patients (get it from here: <https://pain.insybio.com/>) offering them the following features:

- Evaluation of chronic pain situation of patients through the completion of a user-friendly web form
- Monitoring the progress of chronic pain patients over the time (trends, graphical representation of their clinical and demographics characteristics etc.)
- Suggesting suitable patients for non-opioid treatments
- Suggesting the best performing non-opioid treatment among 4 different formulations.

98.1% of the patients that were classified into the responders group presented a decrease in the pain scales and in the total number of administered drugs 3-6 months after having our test.

The available functionalities of the tool include an overview of My Patients with their Tests, New Patient addition, New Test addition and viewing Test results.

## Logging in

In the login page at [pain.insybio.com](http://pain.insybio.com), you enter your email and your password and press the “Log In” button.

If you don't have an account yet, you should click the respective button "Contact us!". This redirects you to a page where a registration form should be filled out.

**Create Account**

Please fill the following form and we will contact you short after:

All the fields are required.

I agree to receive news and updates from InSyBio

I agree the [terms of use](#) .

If you have already access credentials, go to the login page:

In case you have forgotten your password, you can click the respective link. In the page you will be redirected to, you have to enter your email. After that a link where you can update the password will be sent to you.

## Forgot Password

Please fill the following form and we will contact you short after:

All the fields are required.

## My Patients

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After logging in, you are redirected to the home page - the patient index view. In the patient index view you are able to view your patients with their submitted tests (baselines and follow ups).

This part of the view looks like the following:

**My Patients**

Tests count

Filters Active - 0 Clear All

Total tests

0 1

1 1

2 1

Search:

Add test	Patient Code	Date of birth	Gender	Comments	Total tests	Baseline	Followup 1
+Add	patient 2	1989-04-08	Female	Office Job	1	Baseline <span style="font-size: 0.8em;">🗑️</span>	-
+Add	patient 1	1985-05-01	Male	Athlete	2	Baseline <span style="font-size: 0.8em;">🗑️</span>	Followup 1 <span style="font-size: 0.8em;">🗑️</span>
+Add	patient 3	1983-06-06	Male	Manual Job	0	-	-

Showing 1 to 3 of 3 entries
Previous 1 Next

The above table shows all the basic information of a patient (Patient Code, Date of Birth, Gender, Comments) including the tests information (Total tests and the results of the completed tests). The first test of a patient is the Baseline test and every new one is called Followup 1, Followup 2 etc. In the field “Baseline” and “Followup 1, 2 etc” you are able to click the given link in order to view the results of each test. By clicking the delete icon next to the test’s link you are able to delete the selected test. In the first field “Add test” you can create a new test for the patient.

Above the table there is a pie chart and a filter panel. By clicking at one or more lines of the filter panel you are able to filter the patients table according to the number of their submitted tests. For example, clicking on the line where Total tests is 0, you are able to see only those patients for whom you have not yet submitted tests. The pie chart shows the tests count of the patients presented in the table.

## Create new Patient

In the create new patient form you are able to fill out the basic information about a patient. A patient code, the date of birth, the gender and optionally some worth mentioning comments.

**Create new Patient**

Fields with \* are required.

Patientcode \*      Date of birth      Gender      Comments

     03/01/2021       Male  Female     


After creating a patient you can see the patient's details in the table "My Patients" and add his first test (Baseline).

## Create new Test

This page allows you to create a new test for a patient. The first test of a patient is the Baseline test and every new one is called Followup 1, Followup 2 etc. By entering this view you can see a simple questionnaire that must be filled out in order to identify if a non-opioid treatment is suitable for this patient and which one of the four supported formulations.

At first you should answer the questionnaire, then press the submit button, wait a minute without pressing anything and finally the results will appear on screen.

The test consists of 4 parts. The “Date of Survey”, the “Primary Complaint/ Diagnosis”, “Severity/ Interference” and “Current Medication Usage”.

**Date of survey**  

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**Primary complaint/ Diagnosis**  
(Check all that apply)

**Arthritis**       Hands    Feet    Hips    Knees    Neck    Shoulders    Back    Other

**Neuropathy or Radiculopathy (Radiating pain)**       Hands    Feet    Neck    Back    Sciatica    Other

**Myofascial/ Musculoskeletal Pain or Spasm**       Neck    Shoulder    Back    Hips    Other

**Tendinitis**       Shoulder    Elbow    Knee    Wrist    Hip    Other

**Other**       



## Severity/ Interference

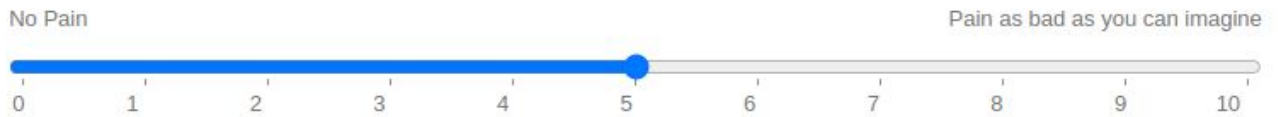
1. Throughout our lives, most of us have had pain from time to time (such as minor headaches, sprains, and toothaches). Have you had pain other than these everyday kinds of pain today?

Yes  No

2. Select the areas where you feel pain.

Ankle  Elbow  Foot  Hand  Head  Hip  Neck  Shoulder  Knee  Upper Arm  
 Upper Leg  Wrist  Lower Arm  Lower Leg  Back

3. Please rate your pain by selecting the one number that best describes your pain at its worst in the last 24 hours.



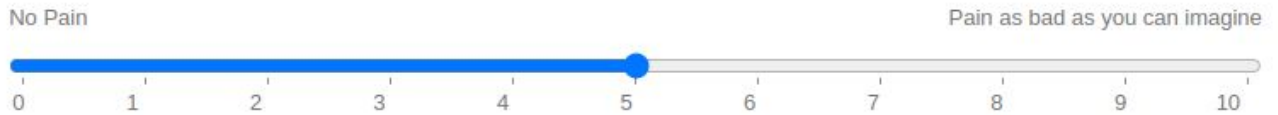
4. Please rate your pain by selecting the one number that best describes your pain at its least in the last 24 hours.



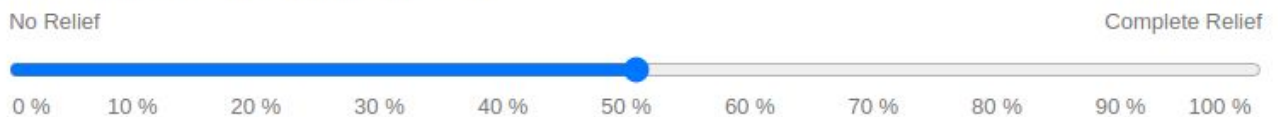
5. Please rate your pain by selecting the one number that tells how much pain you have on the average.



6. Please rate your pain by selecting the one number that tells how much pain you have right now.

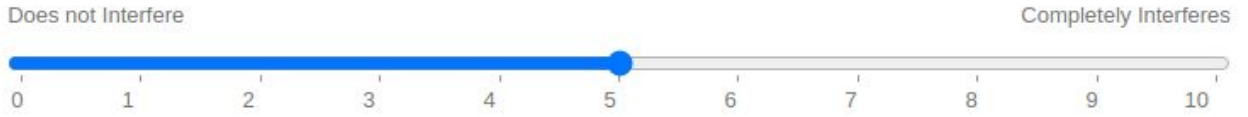


7. In the last 24 hours, how much pain relief have treatments or medications provided? Please select the one percentage that most shows how much relief you have received.



8. Select the one number that describes how, during the past 24 hours, pain has interfered with your:

**A. General Activity**



**B. Mood**



**C. Walking Ability**



**D. Normal Work (includes both work outside the home and housework)**



**E. Relations with other people**



**F. Sleep**



**G. Enjoyment of life**



## Current medication usage

Yes  None

(Check all that apply)

### 1. Over-the-Counter (OTC) Pain Medication

- Advil®, Motrin® (ibuprofen)
- ALEVE® (naproxen)
- Aspirin (acetylsalicylic acid)
- Tylenol® (acetaminophen)
- Other

If you have indicated any medications taken above - What is dose and how often per day?

- 1 x day
- 2 x day
- 3 x day
- More than 3 x day
- As Needed

Dosage

### 2. Anti-Inflammatory (Prescription)

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Anaprox (naproxen sodium) | <input type="checkbox"/> Feldene (piroxicam)    | <input type="checkbox"/> Toradol (ketorolac tromethamine) |
| <input type="checkbox"/> Celebrex (celecoxib)      | <input type="checkbox"/> Indocin (indomethacin) | <input type="checkbox"/> Vimovo (naproxen/ esomeprazole)  |
| <input type="checkbox"/> Clinril (sulindac)        | <input type="checkbox"/> Lodine (etodolac)      | <input type="checkbox"/> Voltaren (diclofenac)            |
| <input type="checkbox"/> Daypro (oxaprozin)        | <input type="checkbox"/> Mobic (meloxicam)      | <input type="checkbox"/> Other                            |
| <input type="checkbox"/> Disalcid (salsalate)      | <input type="checkbox"/> Naprosyn (naproxen)    |   |
| <input type="checkbox"/> Dolobid (diflunisal)      | <input type="checkbox"/> Relafen (nabumetone)   |   |

If you have indicated any medications taken above - What is dose and how often per day?

- 1 x day
- 2 x day
- 3 x day
- More than 3 x day
- As Needed

Dosage

### 3. Narcotic

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Avinza®, Kadian® (morphine)        | <input type="checkbox"/> Duragesic®, Fentora®, Actiq® (fentanyl)          | <input type="checkbox"/> Oxycontin®, Oxyfast®, Percocet®, Roxicodone® (oxycodone and acetaminophen) |
| <input type="checkbox"/> Demerol (meperidine)               | <input type="checkbox"/> Lorcet®, Lortab®, Norco®, Vicodin® (hydrocodone) | <input type="checkbox"/> Other: Neurontin® (gabapentin) Lyrica® (pregabalin) Ultram®                |
| <input type="checkbox"/> Dilaudid®, Exalgo® (hydromorphone) | <input type="checkbox"/> Opana® (oxymorphone)                             |   |

If you have indicated any medications taken above - What is dose and how often per day?

- 1 x day
- 2 x day
- 3 x day
- More than 3 x day
- As Needed

Dosage

When you answer the questions for your patient, you submit the test and wait a few seconds to be redirected to a result page with all the detailed information, graphs and predictions about the respective patient.

## View Test

In the view test page you can see the results of a test with the submitted answers of the questionnaire.

At the top of the screen, you can see a concise result of the submitted test. The patient is predicted to be either a responder or a non-responder for Topical Analgesics Therapies. If the pain situation of the patient is evaluated as mild, then results are not produced and you get informed accordingly. The percentage shown on the result page of responders and non-responders shows the predicted average reduction (or increase) in the patient's pain severity, interference, pain related complaints and drugs used with the best performing non-opioid treatment:

### *Responder of Topical Analgesics Therapies*

**This Patient is predicted to be a responder of Topical Analgesics Therapies.**

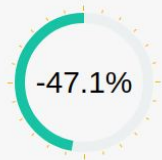
Benefit is expected in all examined metrics from using a topical analgesics therapy for treating his chronic pain condition by an average reduction of 59.4% in his pain severity, interference, pain related complaints and drugs used.



### *Non - Responder of Topical Analgesics Therapies*

**This Patient is predicted to be a non-responder of Topical Analgesics Therapies.**

This patient is classified in the non-responders group since he is not predicted to benefit in ALL examined metrics from using a topical analgesics therapy for treating his chronic pain condition. However he may still benefit in some of them - see detailed results.



*Mild pain situation*

This tool has been designed to personalize response to therapy treatments for severe chronic pain cases and/or patients administered with Opioids or Anticonvulsants.

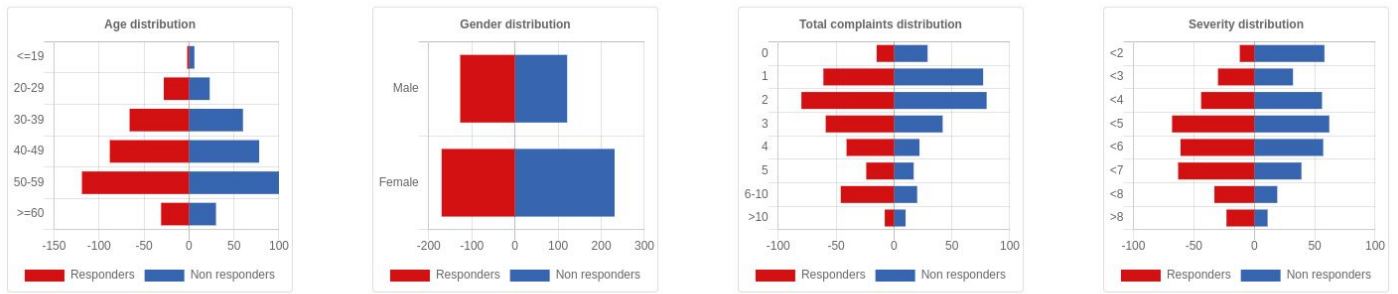
The chronic pain situation of the patient is evaluated as mild and thus he is not suitable for the provided test. The clinician should consider administering a mild pain treatment.

Furthermore a “Detailed results for each topical analgesic” part shows detailed results for the 4 different formulations:



Additionally, a “Distribution graphs of characteristics of responders and non responders in topical analgesics” part depicts the distribution of the responders and non responders in topical analgesics non-opioid treatments in some of the characteristics monitored from the questionnaire of the present tool:

Distribution graphs of characteristics of responders and non responders in topical analgesics



These graphs depict the distribution of the responders and non responders in topical analgesics non-opioid treatments in each one of the characteristics monitored from the questionnaire of the present tool.

In the final part of the result page you are able to view the submitted responses of the patient's questionnaire. In this part you have also the opportunity to delete the submitted test:

View submitted responses

Date of survey

2021-03-01



Delete Test #156

Primary complaint/Diagnosis

(Check all that apply)

Arthritis  Hands  Feet  Hips  Knees  Neck  Shoulders  Back  Other

Neuropathy or Radiculopathy (Radiating pain)

Hands  Feet  Neck  Back  Sciatica  Other

Myofascial/ Musculoskeleta

# How to get InSyBio Precision Chronic Pain Treatment Tool

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To purchase InSyBio Precision Chronic Pain Treatment Tool contact us at [info@insybio.com](mailto:info@insybio.com).

## About Us

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InSyBio Ltd is a bioinformatics pioneer company ([www.insybio.com](http://www.insybio.com)) in personalized healthcare, that focuses on developing computational frameworks and tools for the analysis of complex life-science and biological data in order to develop predictive integrated biomarkers (biomarkers of various categories) with increased prognostic and diagnostic aspects for the personalized Healthcare Industry.

InSyBio Suite consists of tools for providing integrated biological information from various sources, while at the same time it is empowered with robust, user-friendly and installation-free bioinformatics tools based on intelligent algorithms and methods.

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