

GeoPain - Data Dictionary

(Draft)

This file describes different fields of stored data as well as the overall organization of data in generated CSV and JSON reports.

Organization

Each report type (CSV/JSON) is a little different but follow higher-level concepts for grouping data together.

Pain Entry:	A single recorded moment of pain. This often includes a time for the entry, NRS score and (in some cases) regional statistics from the 3D bodymap.
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JSON – This is a hierarchical format intended to be procedurally parsed/processed. The data is grouped into “attacks” and within each attack is a collection of entries representing when the attack started/stopped, additional entries entered by the user, as well as the max and average pain during the attack. Collections of items (ex. entries, symptoms, dermatomes, etc.) are represented as arrays.

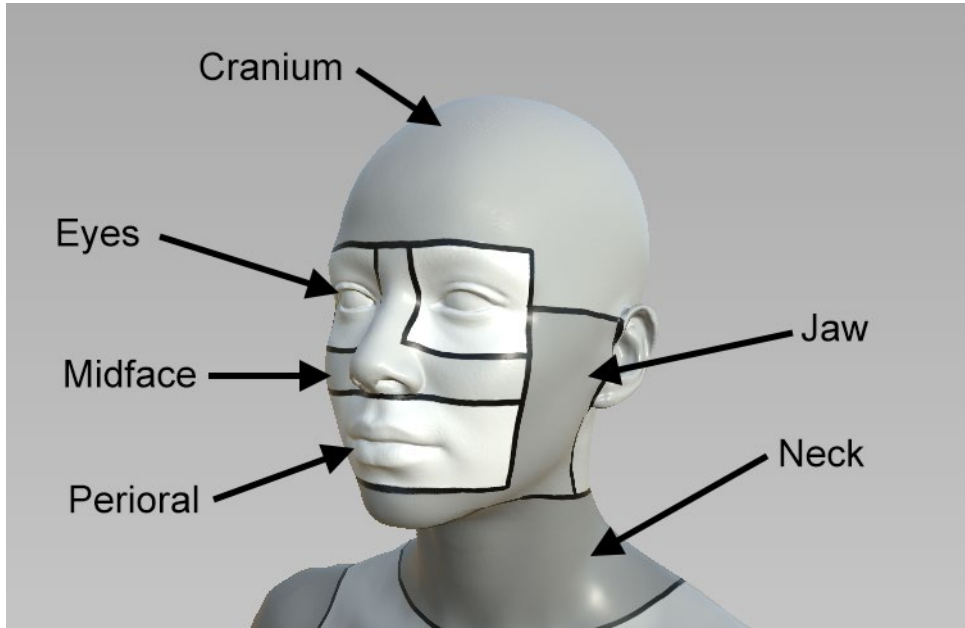
Note: Each entry contains only the data relevant to the entry.

Field Reference

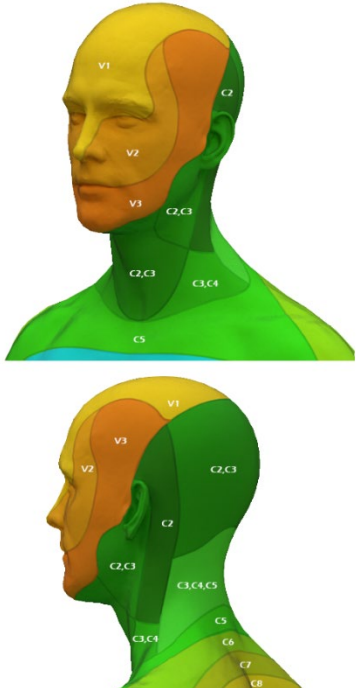
Below is a list of fields found in the various report types and what they represent. Currently all 12 regions for the head are listed whether they have data or not. This is intended to help establish static ranges of cells that can be used for your analysis team.

Note: Since only the NRS is captured for an attack’s “average pain” any regional statistics are computed from previous entries (ex. Start Entry + any additional entries added during the attack).

subject/username	Subject ID (i.e. username)
label(s)	A descriptive label for describing the entry.
timezone	<p>The local timezone of the device when the entry was created. It currently uses .NET TimeZone values (link). (ex. “Eastern Daylight Time”)</p> <p>Note: This is for display purposes only as the actual string may change between devices due to the OS’s installed timezone names. For example, one Android</p>

	phone may use “EDT” while another uses “Eastern Daylight Time”.
time_created	<p>When the event was created by the system. Time is stored in the Universal Time Code (UTC) using ISO 8061 format: YYYY-MM-DDTHH:mm:ss.sss±hh:mm. (ex. 2020-04-13T18:08:31.367-04:00)</p> <p>Note: The first portion of the timestamp (before the ±) represents the local time of when/where the entry was created. The offset represents the time difference between the local time and UTC. Combining both will yield UTC moment in time.</p> <p>Note: The time has millisecond accuracy (3 decimal places).</p>
timestamp	When the patient said the pain happened. Follows same format for time_created.
time_modified	If/when the pain entry was modified. If this field equals time_created then the patient never modified the entry. Follows same format as time_created.
confidence	<p>A scalar value that describes the user’s confidence when the pain occurred and can be used for when pain starts/stops while the user is asleep.</p> <p>0 = no confidence (asleep/default), 1 = full confidence (awake)</p>
NRS	Numerical Rating Scale using a 0-10 scale.
region(s)	<p>The body region for the following statistics. Each region is accompanied by 6 columns captures pain intensity and coverage.</p>  <p>The diagram shows a 3D model of a human head and neck. The head is divided into several regions by black lines. Labels with arrows point to these regions: 'Cranium' points to the top of the head; 'Eyes' points to the eye area; 'Midface' points to the cheek and nose area; 'Perioral' points to the mouth area; 'Jaw' points to the jawline; and 'Neck' points to the neck area.</p>

	<p>Available regions are broken into left/right side and grouped into hierarchical composite regions. (ex. 'left_eye' is included in "eyes", "head", and "headneck")</p> <ul style="list-style-type: none"> • headneck: composite region of the below sub-regions <ul style="list-style-type: none"> ▪ head: composite region of the below sub-regions <ul style="list-style-type: none"> • cranium • eye • midface • perioral • mouth: always empty for this project • jaw ▪ neck <p>Note: In JSON reports the regions included are unique to all entries and remain consistent throughout the report. For example, if the user only paints in the left eye for one entry that region will be listed in all entries. This makes it easier to know which regions are in the file in case a table needs to be constructed with the data.</p>
PAINS	<p>This is a proprietary measure of GeoPain that combines both the pain area and intensity and has been shown to correlate with opioid production of the brain. A score of 100% is equal to an entire region completely covered with the highest severity of pain. (i.e. a 10 over the whole area)</p> <p>$\text{PAINS} = \text{total_intensity} / (\text{total_cells} * \text{num_pain_levels})$</p>
intensity	<p>The average intensity for all colored cells mapped to a 0-10 scale</p> <p>$\text{Intensity} = \text{total_intensity} / \text{total_covered}$</p>
coverage	<p>The % of the region covered with pain data</p> <p>$\text{Coverage} = \text{total_covered} / \text{total_cells}$</p>
total_intensity	The sum of all cells with stored pain information
total_covered	The total number of cells colored in with pain data for the region
total_cells	The total number of cells for the given region

<p>dermatomes</p>	<p>This is an experimental field not to be solely relied upon for pain determinations. It is provided as a means for additional context that may prove useful, but has yet to be validated.</p> <p>The head region consists of the following dermatomes: V1, V2, V3, C2, C3, C4, C5.</p>	
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