**Emotional Injury**

As people's judgement can be impaired by their emotional state, the data was analyzed to find which emotions are most mentioned in the 'Notes' field.

**Happiness**

Not surprisingly, no records were found to include the words "happy", "happiness", or "glad". One record did include "not happy", but that was not included in the count for obvious reasons.

**Sadness**

Sadness returned 18 results, based on searching for "sad", "sadness", "depressed" or "unhappy". Records had to be filtered for the use of "depressed" to describe some injuries like "depressed skull", and records that indicated that the the patient was sad to be in the ER, which means that sadness was not the cause of the injury.

|  | **Mean age** | **% of Injuries** |
| --- | --- | --- |
| **FEMALE** | 32.0 | 55.6 |
| **MALE** | 34.8 | 44.4 |



Injuries related to sadness affected females a bit more than males, as evidenced by the percentages of the injuries affecting each sex.  
The mean age for these injuries was similar for males and females, being in the early thirties for both. When analyzed by age, a peak in injuries is seen in the teenage years for both sexes. This is the only observable pattern, which could be due to the relatively low number of data points or may be an indicator that sadness related injuries occur at a random rate across all ages beyond the teenage years.



The top three products involved in the injuries related to sadness are floors, knives, and walls. By looking at the data, in the case of floors and walls, this is due to many people being found laying on the floor after they have been injured, or injuring themselves by bumping into walls. This might indicate that the primary cause is lack of focus or distraction due to being depressed or sad. In this dataset the knife injuries were evenly split between one due to distraction, and one due to self-harm.

**Excitement**

Excitement returned 20 results, based on searching for "excited" or "excitement".

|  | **Mean age** | **% of Injuries** |
| --- | --- | --- |
| **FEMALE** | 22.5 | 59.1 |
| **MALE** | 26.2 | 40.9 |



Injuries related to excitement affected females 50% more than males, as evidenced by the percentages of the injuries affecting each sex. The mean age for these injuries was similar for males and females, being in the mid twenties for both. When analyzed by age, a peak in injuries is seen in children through ten years old and younger for both sexes. The prevalence of these injuries falls dramatically with age, with 75% of injuries reported in people 40 years old or younger. This may be an indication that people older that 40 are less excitable, have less exciting lives, or have learned to curb their enthusiasm.



The data was analyzed to find out what was causing the patient to get excited at the time of their injury, and sorted to find the most common causes.  
Dogs are the mentioned in more than 30% of the cases. All of these incidents involved a dog getting excited and biting a person (e.g. 32YOF LAYING DOWN WITH HER DOG AND THE DOORBELL RANG THE DOG BECAME EXCITED AND JUMPED ONTO PTS FACE).  
Watching sports, swimming pools, and seeing family were each reported twice, or in 10% of the cases.

**FEAR**

Fear returned 37 results, based on searching for "fear", "afraid", "scared" or "frightened".

|  | **Mean age** | **% of Injuries** |
| --- | --- | --- |
| **FEMALE** | 25.6 | 59.5 |
| **MALE** | 24.7 | 40.5 |



Injuries related to fear affected females 50% more than males, as evidenced by the percentages of the injuries affecting each sex. The mean age for these injuries was similar for males and females, being in the mid twenties for both. When analyzed by age, a peak in injuries is seen in children through their teenage years for both sexes. Lower peaks show up in later decades, but are scattered and seem random. This could be due to the relatively low number of data points or may be an indicator that fear-related injuries occur at a random rate across all ages beyond the teenage years.



The top three products involved in the injuries related to fear are beds/bedframes, horseback riding equipment, and a tie in third for bicycles, ceilings/walls, knives, and fireworks.  
The injuries related to beds are related to people getting startled in their beds then getting injured, or people falling out of them (e.g. "64 YO F C/O CHEST PAIN TODAY SAW A RAT IN HER ROOM GOT SCARED JUMPED OUT FROM HER BED HITTING CHEST ON DRESSING TABLE DX MSK PAIN" or "55 YR OLD FEMALE SCARED BY CAT AND FELL OUT OF BED CONTUSING KNEE").  
The injuries related to horseback riding equipment are all due to horses getting scared while someone was riding them, or after someone falls off of them (e.g. "27YOM AT THE PARK HORSEBACK RIDING WHEN A RATTLESNAKE SCARED HORSE,PT FELL FROM HORSE ON R HIP DX ACUTE R HIP CONTU,R THIGH CONTU,LUBMAR SPRAI"). It seems like the there is nothing to fear while horse riding, except the horse getting scared.  
Thirdly, injuries related to knives are due to people getting startled while they were cutting something with a knife. Injuries related to fireworks (perhaps as some form of cosmic karma) were both due to the dogs being afraid of fireworks then biting a person (e.g. "19YOF ARM ABRASION WHEN BITEN BY DOG WHEN SCARED OF FIREWORKS. TYPE M FIREWORKS. DX ARMABRASION").

After analyzing the data, it is clear that these cases are more accurately described as injuries due to people getting startled, or being around animals who did. This is supported by the randomness seen in the injury-rate by age beyond the teenage years.  
While horses are on top of the list of animals that caused injury by startling people or getting startled themselves, other notable ones include:

* Dogs: 5 incidents
* Cats: 2 incidents
* Friends: 1 incident
* Cousins: 1 incident
* Dragon flies: 1 incident (e.g. "6YF JUMPING ON TRAMPOLINE, GOT SCARED BY DRAGON FLY&FELL OFF LANDING ONTO SHOULDER>>HUMRUS FX"
* Fake Spider: 1 incident (e.g. "6YOF-PT FELL BACKWARDS INTO A GLASS DOOR AFTER BEING AFRAID OF A FAKESPIDER. GLASS BROKE BUT TO BUTTOCKS. DX- LACERATION TO LEFT BUTTOCKS")

**Anger leads to..punching**

Anger returned 839 results, based on searching for "angry", "anger", "mad", "upset" or "frustrated". This is by far the emotion with the highest number of injuries related to it. Frustration was separated from anger as a separate emotion at the beginning of the analysis. However, after reading through the cases, the similarity between the two was high. Particularly in the presence and prevalence of wall-punching behavior in both categories.

|  | **Mean age** | **% of Injuries** |
| --- | --- | --- |
| **FEMALE** | 23.8 | 30.9 |
| **MALE** | 23.3 | 69.1 |



The male of the species is more than twice as likely to injure himself due to anger than the female, as evidenced by the percentages of the injuries affecting each sex. The mean age for these injuries was similar for males and females, being in the mid twenties for both. When analyzed by age, a peak in injuries is seen in the teenage years for both sexes. Beyond that, a steady decline in injuries is seen as both males and females age.  
This could indicate that as people get older they get wiser and are less prone to anger, or that people find ways to channel their anger in a way that does not injure them.



The data was analyzed to find out whom the patient was angry with at the time of their injury, and sorted to find the most common people.  
Surprisingly, mothers top the list, with many people (average age of 14.3 years) hurting themselves due to being angry at their mothers. (e.g. 17 YOM HAD A FIGHT WITH BROTHER, MOM TOLD HIM TO LEAVE UNTIL HE "COOLEDOFF" - TRIED TO GET IN HOUSE, GOT MAD ,PUNCHED WINDOW. DX; HAND LAC).  
Coming in a close second is 'partner' which in this analysis is used to indicate a romantic partner. Siblings come in third, and fathers a distant fourth.  
It seems counterintuitive that the people thought to be closest to us are the ones that make us angry enough to hurt ourselves. It seems like the intensity of the emotional connection, not necessarily whether it is positive or negative, is what predicts the likelihood of injury.



One of the interesting observations on the the anger dataset, is the prevalence of people punching inanimate objects, mainly walls. This was exhibited in a remarkable 65% of the cases where anger was involved. As a point of comparison, kicking was exhibited in around 3% of the cases. The text search was carefully performed to exclude records of people getting punched or kicked, as opposed to doing the punching or kicking themselves. The demographics of the wall-punchers within the datasets closely follow the demographics of the Anger Injuries in general with the males being more than twice as likely to injure themselves as the females, and the mean age for both sexes is in the mid twenties.



**Injury Prevalence Score**

In an attempt to understand the risk of injury for various groups, the data was analyzed by age and sex, and compared to data from the 2015 US Census. One way to measure this risk is to compare the prevalence of injury in the data for each sex and age, and divide that by the proportion of the population that segment represented in the 2015 US Census data. The resulting score would be 1 if the prevalence of injury in the data was the same as the proportion of the population that segment represents. A score higher than 1 would indicate an over-representation in the data of the affected segment in relation to its proportion of the population (more injury-prone), and a score below one would represent the opposite (less injury-prone).



Based on the use of the Injury Prevalence Score (IPS), a few observations can be made. Firstly, for a long span of adulthood, the IPS is lower than 1. For males, this is between the ages of 23 and 79 and for females, it is between the ages of 18 and 75. This might point to a lower risk of injury at those ages.

In the early years of life, the IPS is quite high, with a significant peak at age 2 for both sexes. Culturally, this might have been perceived hence the infamous "terrible twos". Another peak is seen at age 14 for both sexes as well. This might be due to the quick changes that occur around puberty, and the resulting clumsiness that some feel as they get accustomed to their growing bodies. Teens at this age might also be gaining more independence from their care givers, allowing for more opportunities for injury.

In the later years, starting at 75 for females and 78 for males, the IPS score is now greater than 1, and shows a steep increase by age for both ages.

Another clear trend is that females are less prone to injury than males, from birth through the age of 61, at which point women start to have a higher IPS score than men.

## Junk in the Trunk

This search returned 40 results, using the search term "rectum".

|  | **Mean age** | **% of Injuries** |
| --- | --- | --- |
| **FEMALE** | 19.7 | 27.5 |
| **MALE** | 37.9 | 72.5 |



Males are almost three times more likely to suffer this type of injury, as evidenced by the percentages of the injuries affecting each sex.  
The mean age for these injuries for males and females is quite different, with mean age for male patients being around double that of female patients. For females, 63% of the reported injuries occur in patients before their teens. The remaining 37% of cases are spread between the ages of 20 and 50. This implies that this behavior in females is largely restricted to children doing what children do.  
In males, the cases reported show the behavior starting in the teen years. Unlike in the female population, the behavior continues throughout the whole lifespan. Other peaks are seen in the thirties and late fifties, with 79% of the cases reported in patients older than 20 years old.



The top two products used by the patients to cause this injury are vibrators/sex toys, used in 26% of the cases (e.g. 55YOM W/FOREIGN BODY IN RECTUM 2/2 DILDO IN RECTUM X 2 DAYS THAT HE WASUNABLE TO GET OUT), and pens/pecils used 13% of the cases (e.g. 22 YO MALE PLACED A BINGO DAUBER INTO HIS RECTUM. DX FOREIGN BODY RECTUM B) Other categories include balls/spherical objects used in 8% of the cases (e.g. 40 YR OLD MALE PUT BASEBALL UP RECTUM AND UNABLE TO REMOVE IT AND TAKENTO OR TO REMOVE), and bottles, also in 8% of the cases. Other notable objects are tools, brushes, and drugs (which were all related to smuggling, e.g. 20YOM HID PLASTIC BAGS OF MJ IN RECTUM WHEN ARRESTED & INGESTED THEM INJAIL TO AVOID MORE CHARGES. DX FB INGESTION, MJ INTOXICATION) used in 5% of the cases, respectively.