

	age	sex	on_thyroxine	query_on_thyroxine	on_antithyroid_meds	sick	pregnant	thyroid_surg
0	29	F	f	f	f	f	f	f
1	29	F	f	f	f	f	f	f
2	41	F	f	f	f	f	f	f
3	36	F	f	f	f	f	f	f
4	32	F	f	f	f	f	f	f

5 rows x 31 columns

←

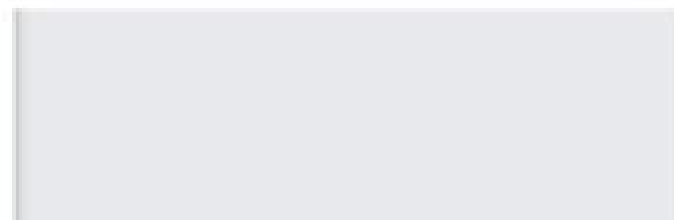
data.shape

(9172, 31)

age	0
sex	307
on_thyroxine	0
query_on_thyroxine	0
on_antithyroid_meds	0
sick	0
pregnant	0
thyroid_surgery	0
I131_treatment	0
query_hypothyroid	0
query_hyperthyroid	0
lithium	0
goitre	0
tumor	0
hypopituitary	0
psych	0
TSH_measured	0
TSH	842
T3_measured	0
T3	2604

hypothyroid conditions	593
general health	436
binding protein	376
replacement therapy	336
miscellaneous	281
hyperthyroid conditions	182
antithyroid treatment	33

Name: target, dtype: int64



```
data[data.age>100]
```

age	sex	on_thyroxine	query_on_thyroxine	on_antithyroid_meds	sick	pregnant	thyroid_surgery	I131_treatment	qlt
-----	-----	--------------	--------------------	---------------------	------	----------	-----------------	----------------	-----

0 rows × 23 columns

+

	age	sex	on_thyroxine	query_on_thyroxine	on_antithyroid_meds	sick	pregnant	thyroid_surgery	I131_treatme
4	32.0	F	f	f	f	f	f	f	f
18	63.0	F	t	f	f	t	f	f	f
32	41.0	M	f	f	f	f	f	f	f
33	71.0	F	t	f	f	f	f	f	f
39	55.0	F	t	f	f	f	f	f	f
...
9153	64.0	M	f	f	f	f	f	f	f
9157	60.0	M	f	f	t	f	f	f	f
9158	64.0	M	f	f	f	f	f	f	f
9162	36.0	F	f	f	f	f	f	f	f
9169	69.0	M	f	f	f	f	f	f	f

2237 rows × 22 columns

```
F    1701
M     536
Name: sex, dtype: int64
```

```
<class 'pandas.core.frame.DataFrame'>
```

```
Int64Index: 2237 entries, 4 to 9169
```

```
Data columns (total 22 columns):
```

#	Column	Non-Null Count	Dtype
0	age	2237 non-null	float64
1	sex	2237 non-null	int64
2	on_thyroxine	2237 non-null	int64
3	query_on_thyroxine	2237 non-null	int64
4	on_antithyroid_meds	2237 non-null	int64
5	sick	2237 non-null	int64
6	pregnant	2237 non-null	int64
7	thyroid_surgery	2237 non-null	int64
8	I131_treatment	2237 non-null	int64
9	query_hypothyroid	2237 non-null	int64
10	query_hyperthyroid	2237 non-null	int64
11	lithium	2237 non-null	int64
12	goitre	2237 non-null	int64
13	tumor	2237 non-null	int64
14	hypopituitary	2237 non-null	int64
15	psych	2237 non-null	int64
16	TSH	2237 non-null	object
17	T3	2237 non-null	object
18	TT4	2237 non-null	object
19	T4U	2237 non-null	object
20	FTI	2237 non-null	object
21	TBG	2237 non-null	object

```
dtypes: float64(1), int64(15), object(6)
```

```
memory usage: 482.0+ KB
```

	age	sex	on_thyroxine	query_on_thyroxine	on_antithyroid_meds	sick	pregnant	thyroid_surgery	l131_treatm
4	32.0	0	0	0	0	0	0	0	
18	63.0	0	1	0	0	1	0	0	
32	41.0	1	0	0	0	0	0	0	
33	71.0	0	1	0	0	0	0	0	
39	55.0	0	1	0	0	0	0	0	
...
9153	64.0	1	0	0	0	0	0	0	
9157	60.0	1	0	0	1	0	0	0	
9158	64.0	1	0	0	0	0	0	0	
9162	36.0	0	0	0	0	0	0	0	
9165	60.0	1	0	0	0	0	0	0	

	age	sex	on_thyroxine	query_on_thyroxine	on_antithyroid_meds	sick	pregnant	thyroid_surgery	i131_treat
4	32.0	0	0	0	0	0	0	0	
18	63.0	0	1	0	0	1	0	0	
32	41.0	1	0	0	0	0	0	0	
33	71.0	0	1	0	0	0	0	0	
39	55.0	0	1	0	0	0	0	0	
...
9153	64.0	1	0	0	0	0	0	0	
9157	60.0	1	0	0	1	0	0	0	
9158	64.0	1	0	0	0	0	0	0	
9182	38.0	0	0	0	0	0	0	0	

target	
0	5
1	4
2	5
3	1
4	6
...	...
2232	2
2233	2
2234	1
2235	1
2236	1

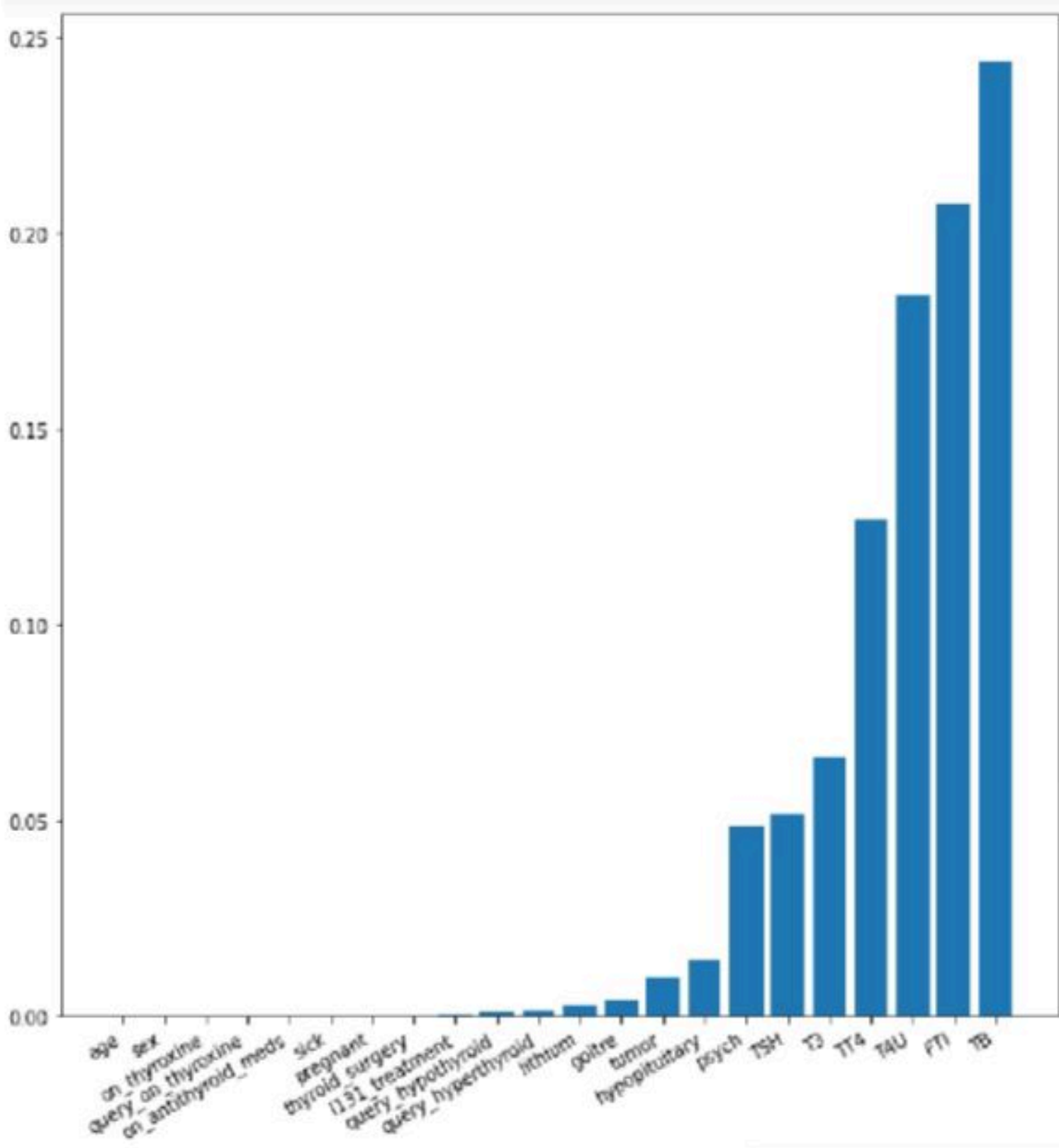
2237 rows x 1 columns

```
array([[ -1.62721505, -0.44060477, -0.4238      , ..., -2.50870684,
        -1.40088079,  3.29445097],
       [ -0.11561403, -0.44060477,  2.35960359, ..., -0.26259147,
         0.0720981  , -0.19494049],
       [  1.1874903  ,  2.26960776, -0.4238      , ...,  0.17039463,
        -0.19352104, -0.19494049],
       ...,
       [  1.395987   , -0.44060477,  2.35960359, ...,  0.43615031,
         0.06101022, -0.19494049],
       [  0.72802783, -0.44060477,  2.35960359, ...,  0.143333   ,
         0.89086631, -0.19494049],
       [  1.15628145, -0.44060477,  2.35960359, ...,  0.39723515,
        -0.26588659, -0.19494049]])
```

	age	sex	on_thyroxine	query_on_thyroxine	on_antithyroid_meds	sick	pregnant	thyroid_s
0	-1.627215	-0.440605	-0.423800	-0.105069	-0.158703	-0.141815	-0.137297	-0.2
1	-0.115614	-0.440605	2.359604	-0.105069	-0.158703	-0.141815	-0.137297	-0.2
2	1.187490	2.269608	-0.423800	-0.105069	-0.158703	-0.141815	-0.137297	-0.2
3	-1.368594	-0.440605	-0.423800	-0.105069	-0.158703	-0.141815	-0.137297	-0.2
4	-0.167738	-0.440605	-0.423800	-0.105069	-0.158703	-0.141815	-0.137297	-0.2
...
3292	0.546923	-0.440605	2.359604	-0.105069	-0.158703	-0.141815	-0.137297	-0.2
3293	0.383062	-0.440605	2.359604	-0.105069	-0.158703	-0.141815	-0.137297	-0.2
3294	1.395987	-0.440605	2.359604	-0.105069	-0.158703	-0.141815	-0.137297	-0.2
3295	0.728029	-0.440605	2.359604	-0.105069	-0.158703	-0.141815	-0.137297	-0.2
3296	1.156281	-0.440605	2.359604	-0.105069	-0.158703	-0.141815	-0.137297	-0.2

3297 rows x 22 columns

feature: age	Score: 0.0
feature: sex	Score: 0.0
feature: on_thyroxine	Score: 0.0
feature: query_on_thyroxine	Score: 0.0
feature: on_antithyroid_meds	Score: 6.066120715801926e-05
feature: sick	Score: 0.00024264482863207705
feature: pregnant	Score: 0.0003033060357900963
feature: thyroid_surgery	Score: 0.0003033060357900963
feature: I131_treatment	Score: 0.0006066120715801926
feature: query_hypothyroid	Score: 0.0012132241431604518
feature: query_hyperthyroid	Score: 0.0015165301789505925
feature: lithium	Score: 0.0027904155292689968
feature: goitre	Score: 0.00442826812253565
feature: tumor	Score: 0.010009099181073733
feature: hypopituitary	Score: 0.014376706096451319
feature: psych	Score: 0.0488929329693661
feature: TSH	Score: 0.05131938125568698
feature: T3	Score: 0.06618137700940249
feature: TT4	Score: 0.12684258416742494
feature: T4U	Score: 0.1841067637245981
feature: FTI	Score: 0.20752198968759478
feature: TB	Score: 0.24416135881104034



	goitre	tumor	hypopituitary	psych	TSH	T3	TT4	T4U	FTI	TBG
0	-0.052319	-0.137297	-0.024637	-0.107982	-0.315458	-1.035358	-1.704935	-2.508707	-1.400881	3.294451
1	-0.052319	-0.137297	-0.024637	-0.107982	-0.090056	0.155233	-0.197223	-0.202591	0.072098	-0.194940
2	-0.052319	-0.137297	-0.024637	-0.107982	-0.278907	-0.471394	-0.227079	0.170395	-0.193521	-0.194940
3	-0.052319	7.283487	-0.024637	-0.107982	-0.284999	0.969848	0.041622	0.485134	-0.133153	-0.194940
4	-0.052319	-0.137297	-0.024637	-0.107982	-0.300321	4.541622	1.459767	-0.127283	1.496783	-0.194940