

Metabolic Syndrome

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What is Metabolic Syndrome?

This is a cluster of conditions that can show a predisposition of diseases that can be managed but have not been cured, yet.

- Diabetes
- Heart Attack
- Stroke









Factors

Some factors are things that you can see on social media: marital status, race, sex, age, and income.

It also has medical information like BMI, waist circumference, and blood work results testing like a Lipid profile test and a Blood Glucose test.

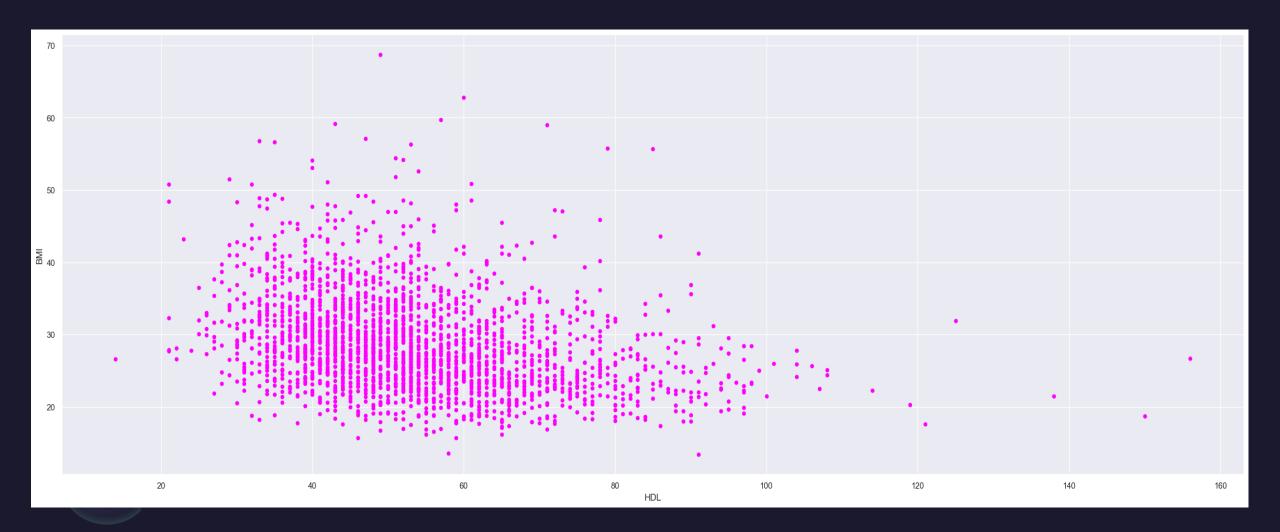


Correlation Map

| | | | | | | | | | | | 1.0 |
|---|-------|-----------|-------|-------------|---------|----------|--------------|--------|---------------|---|-------|
| Age | 1 | 0.23 | 0.08 | 0.23 | 0.12 | 0.15 | 0.24 | 0.079 | 0.07 | | |
| WaistCirc | 0.23 | 1 | 0.91 | 0.12 | 0.048 | 0.36 | 0.26 | -0.35 | 0.24 | - | 0.8 |
| BMI | 0.08 | 0.91 | 1 | 0.077 | 0.039 | 0.27 | 0.21 | -0.29 | 0.16 | - | 0.6 |
| Albuminuria | 0.23 | 0.12 | 0.077 | 1 | 0.54 | 0.18 | 0.2 | -0.024 | 0.11 | | . 0.4 |
| UrAlbCr | 0.12 | 0.048 | 0.039 | 0.54 | 1 | 0.13 | 0.11 | 0.0017 | 0.078 | | |
| UricAcid | 0.15 | 0.36 | 0.27 | 0.18 | 0.13 | 1 | 0.056 | -0.25 | 0.21 | - | 0.2 |
| BloodGlucose UricAcid UrAlbCr Albuminuria | 0.24 | 0.26 | 0.21 | 0.2 | 0.11 | 0.056 | 1 | -0.21 | 0.27 | - | 0.0 |
| 且 | 0.079 | -0.35 | -0.29 | -0.024 | 0.0017 | -0.25 | -0.21 | 1 | -0.39 | _ | -0.2 |
| Triglycerides | 0.07 | 0.24 | 0.16 | 0.11 | 0.078 | 0.21 | 0.27 | -0.39 | 1 | | |
| | Age | WaistCirc | BMI | Albuminuria | UrAlbCr | UricAcid | BloodGlucose | HDL | Triglycerides | | |

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BMI and HDL



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Blood Glucose by patient's age

| Category | Fasting value | Post prandial / aka post meal | |
|--------------|---------------------|-------------------------------|-----------------------|
| | Minimum | Maximum | 2 hours after meal |
| Normal | 70 mg/dl | 99 mg/dl | Less than 140 mg/dl |
| | 4 mmol/l | 6 mmol/l | Less than 7.8 mmol/l |
| Pre-diabetes | 100 mg/dl | 125 mg/dl | 140-199 mg/dl |
| | 6.1 mmol/l | 6.9 mmol/l | 7.8-11 mmol/l |
| Diabetes | More than 126 mg/dl | | More than 200 |
| | More than 7 mmol/l | | More than 11.1 mmol/l |

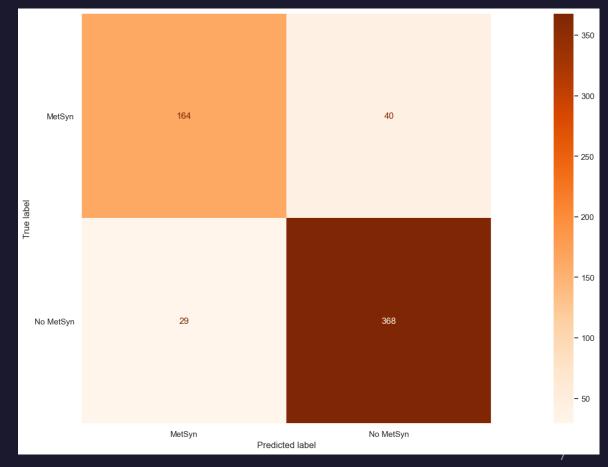


XGBoost Classifier

The best model for this project was the eXtreme Gradient Boosting.

88% accuracy score

Confusion Matrix shows the best presentation of this dataset.



- This data will be essential to help doctors with diagnosis their patient with preventative care.
- This project will help reduce the amount of money hospitals use for patients that don't have insurance but need urgent care/surgeries.
- This data can lead to a reduction in strain for preventable medical conditions.
- We are here for patients, but they are not the only a part of the picture. Family, friends and colleagues are also part of our patients care and life.

With that being said....



The way to get started is to quit talking and begin doing.

Walt Disney







Thank You

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