

# Patient Lab Results

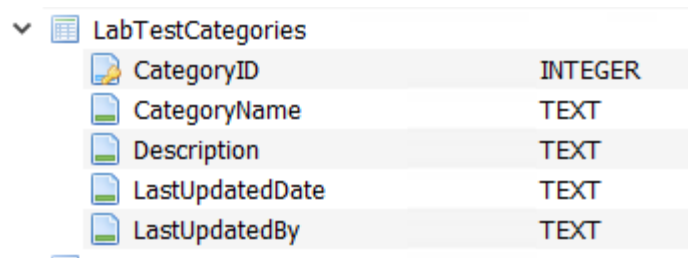
## Swagger Url

<https://patientlabtestapi.azurewebsites.net/swagger/index.html>

## Introduction

This document mentions about the different components of the Patient lab results webapi built on top of DotNet Core and SQLite database. Basically, the api helps to perform the crud operations on the required functionalities listed in this document. The requirement is to capture Patient information and Lab results/tests per patient. As the lab result/test is based on a certain type of lab test, we are categorizing that into the below groups. Each lab test will be associated with a category and sub category.

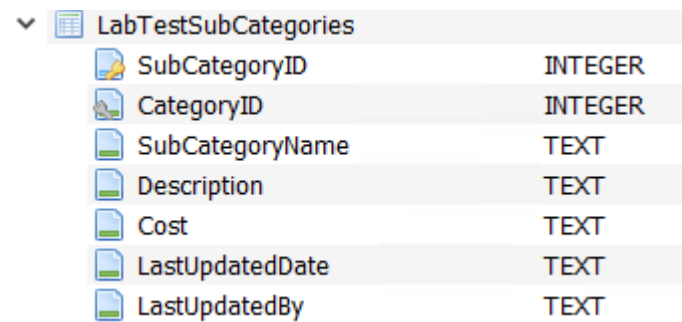
- Categories : The different Categories are General Health, Women's Health, Men's Health etc.



A screenshot of a database table structure for 'LabTestCategories'. The table has five columns: 'CategoryID' (INTEGER), 'CategoryName' (TEXT), 'Description' (TEXT), 'LastUpdatedDate' (TEXT), and 'LastUpdatedBy' (TEXT). Each column is preceded by a small icon representing its data type.

LabTestCategories	
CategoryID	INTEGER
CategoryName	TEXT
Description	TEXT
LastUpdatedDate	TEXT
LastUpdatedBy	TEXT

- SubCategories : For each Category, there can be many Sub categories. For example, the category General Health can have the following sub categories
  - Basic Health Profile
  - Cholestrol Panel
  - Complete Blood Count












A screenshot of a database table structure for 'LabTestSubCategories'. The table has seven columns: 'SubCategoryID' (INTEGER), 'CategoryID' (INTEGER), 'SubCategoryName' (TEXT), 'Description' (TEXT), 'Cost' (TEXT), 'LastUpdatedDate' (TEXT), and 'LastUpdatedBy' (TEXT). Each column is preceded by a small icon representing its data type.

LabTestSubCategories	
SubCategoryID	INTEGER
CategoryID	INTEGER
SubCategoryName	TEXT
Description	TEXT
Cost	TEXT
LastUpdatedDate	TEXT
LastUpdatedBy	TEXT


















- LabResult/Test : This is a look up functionality which will have the name of the test, low and high range, unit.. based on the Sub Category and Category.

For example














*“HDL Cholestrol” is an example of LabResult and it comes under the main Category “General Health” and SubCategory “Cholestrol Panel”*

LabResults		
	ResultID	INTEGER
	SubCategoryID	INTEGER
	ResultType	TEXT
	LowRange	INTEGER
	HighRange	INTEGER
	ResultUnit	TEXT
	ResultDescription	TEXT
	LastUpdatedDate	TEXT
	LastUpdatedBy	TEXT

- Patient : This is the patient entity class that holds the patient information

Patients		
	PatientID	INTEGER
	FirstName	TEXT
	LastName	TEXT
	DOB	TEXT
	StreetAddress	TEXT
	Address2	TEXT
	City	TEXT
	State	TEXT
	Zip	TEXT
	Phone	TEXT
	Email	TEXT
	Gender	INTEGER
	EmergencyContactName	TEXT
	EmergencyPhone	TEXT
	EmergencyEmail	TEXT
	LastUpdatedDate	TEXT
	LastUpdatedBy	TEXT

- PatientLabResults : This entity holds the details of Patient and LabResults/tests combined. For each patient, there can be one or more results in this table.

PatientLabResults		
	PatientLabResultID	INTEGER
	PatientID	INTEGER
	ResultID	INTEGER
	CollectionDate	TEXT
	LabLocation	TEXT
	CollectedBy	TEXT
	TestResultAvailableDate	TEXT
	TestedBy	TEXT
	TestedDate	TEXT
	Result	INTEGER
	Comments	TEXT
	LastUpdatedDate	TEXT
	LastUpdatedBy	TEXT

The below is an example of different Categories, SubCategories and LabResults or tests.

Category	Sub Category	
General Health	Cholestrol Panel	<b>LabResult</b>
		HDL Cholestrol
		LDL Cholestrol
		Triglycerides
Women's Health		
Men's Health		
Digestive Health		
Infectious Disease		

## Authentication and Authorization

The API's are authorized and requires token to access it. For generating the token, the user need to invoke

<https://patientlabtestapi.azurewebsites.net/api/user/validateuser> sending the username/pwd

If the user is not registered, then the below API can be invoked.

<https://patientlabtestapi.azurewebsites.net/api/user>

### API List

User	LabTestCategory
POST /api/user	POST /api/labtestcategory
POST /api/user/validateuser	PUT /api/labtestcategory
	GET /api/labtestcategory
	DELETE /api/labtestcategory/{key}
	GET /api/labtestcategory/{key}
	LabTestSubCategory
	POST /api/labsubcategory
	PUT /api/labsubcategory
	GET /api/labsubcategory
	DELETE /api/labsubcategory/{key}
	GET /api/labsubcategory/{key}

## LabResult

**POST** /api/labresult

**PUT** /api/labresult

**GET** /api/labresult

**DELETE** /api/labresult/{key}

**GET** /api/labresult/{key}

## Patient

**POST** /api/patient

**PUT** /api/patient

**GET** /api/patient

**DELETE** /api/patient/{key}

**GET** /api/patient/{key}

## PatientLabResults

**POST** /api/patientlabreport

**PUT** /api/patientlabreport

**GET** /api/patientlabreport

**DELETE** /api/patientlabreport/{key}

**GET** /api/patientlabreport/{key}

**GET** /api/patientlabreport/getreport

### Patient and Lab Report Stories

Inorder to create a new Lab report, we need to add few information regarding the Categories, Sub Categories and LabResult/tests. The below are the API's to create those.

All the below APIs requires token generated from the below API  
<https://patientlabtestapi.azurewebsites.net/api/user/validateuser> sending the username/pwd

**Category** : <https://patientlabtestapi.azurewebsites.net/api/labtestcategory>

Type : HttpPost

Header : Authorization requires token from the User API

#### Input request

```
{
  "categoryName": "General Health",
  "description": "Take a deep dive into your health with a Comprehensive Health Profile"
}
```

#### Output Response

```
{
  "categoryID": 5,
  "categoryName": "General Health",
  "description": "Take a deep dive into your health with a Comprehensive Health Profile",
  "lastUpdatedDate": "2021-10-21T20:41:45.4494573+00:00",
  "lastUpdatedBy": "testuser1",
  "message": {
    "messageDescription": "Record has been created.",
    "messageCode": "100"
  }
}
```

```
}
```

**SubCategory :** <https://patientlabtestapi.azurewebsites.net/api/labsubcategory>

Type : HttpPost

Header : Authorization requires token from the User API

#### Input Request

```
{
  "categoryID": 5,
  "subCategoryName": "Cholestrol Panel",
  "description": "Test to evaluate the health of your health and arteries",
  "cost": 60
}
```

#### Output Response

```
{
  "subCategoryID": 3,
  "categoryID": 5,
  "subCategoryName": "Cholestrol Panel",
  "description": "Test to evaluate the health of your health and arteries",
  "cost": 60,
  "lastUpdatedDate": "2021-10-21T20:45:25.2728951+00:00",
  "lastUpdatedBy": "testuser1",
  "labTestCategory": null,
  "message": {
    "messageDescription": "Record has been created.",
    "messageCode": "100"
  }
}
```

**LabResult:** <https://patientlabtestapi.azurewebsites.net/api/labresult>

Type : HttpPost

Header : Authorization requires token from the User API

#### Input Request

```
{
  "subCategoryID": 3,
  "resultType": "HDL Cholestrol",
  "lowRange": 100,
  "highRange": 129,
  "resultUnit": "mg/dL",
  "resultDescription": "LDL (low-density lipoprotein), also called “bad” cholesterol, makes up most of your body's cholesterol. High levels of LDL cholesterol raise your risk for heart disease and stroke."
}
```

#### Output Response

```
{
  "resultID": 2,
  "subCategoryID": 3,
  "resultType": "HDL Cholestrol",
  "lowRange": 100,
  "highRange": 129,
  "resultUnit": "mg/dL",
}
```

```

    "resultDescription": "LDL (low-density lipoprotein), also called "bad" cholesterol, makes up most of your body's cholesterol. High levels of LDL cholesterol raise your risk for heart disease and stroke.",
    "lastUpdatedDate": "2021-10-21T20:50:28.3967622+00:00",
    "lastUpdatedBy": "testuser1",
    "labTestSubCategory": null,
    "message": {
      "messageDescription": "Record has been created.",
      "messageCode": "100"
    }
  }
}

```

**Patient:** <https://patientlabtestapi.azurewebsites.net/api/labresult>

Type : HttpPost

Header : Authorization requires token from the User API

### Input Request

```

{
  "firstName": "Maria",
  "lastName": "Jack",
  "dob": "2001-10-21T20:52:21.320Z",
  "streetAddress": "3555 AAA Cir",
  "address2": "Apt C",
  "city": "Montgomery",
  "state": "AL",
  "zip": "36116",
  "phone": "1111111111",
  "email": "mariajack@aaaaaaaa.com",
  "gender": 1,
  "emergencyContactName": "Jack Alex",
  "emergencyPhone": "2222222222",
  "emergencyEmail": "jalex@aaaaaaaa.com"
}

```

### Output Response

```

"patientID": 1,
"firstName": "Maria",
"lastName": "Jack",
"dob": "2001-10-21T20:52:21.32Z",
"streetAddress": "3555 AAA Cir",
"address2": "Apt C",
"city": "Montgomery",
"state": "AL",
"zip": "36116",
"phone": "1111111111",
"email": "mariajack@aaaaaaaa.com",
"gender": 1,
"emergencyContactName": "Jack Alex",
"emergencyPhone": "2222222222",
"emergencyEmail": "jalex@aaaaaaaa.com",
"lastUpdatedDate": "2021-10-21T20:54:37.1675152+00:00",
"lastUpdatedBy": "testuser1",

```



```
"message": {
  "messageDescription": "Record has been created.",
  "messageCode": "100"
}
```

**Patient:** <https://patientlabtestapi.azurewebsites.net/api/patientlabreport>

Type : HttpPost

Header : Authorization requires token from the User API

### Input Request

```
{
  "patientID": 1,
  "resultID": 1,
  "collectionDate": "2021-10-07T20:56:18.181Z",
  "labLocation": "Montgomery",
  "collectedBy": "Jack Daniel",
  "testResultAvailableDate": "2021-10-21T20:56:18.181Z",
  "testedBy": "Jack",
  "testedDate": "2021-10-21T20:56:18.181Z",
  "result": 110,
  "comments": "Test has been completed and the LDL Cholestrol is in the normal range"
}
```

### Output Response

```
"patientLabResultID": 1,
"patientID": 1,
"resultID": 1,
"collectionDate": "2021-10-07T20:56:18.181Z",
"labLocation": "Montgomery",
"collectedBy": "Jack Daniel",
"testResultAvailableDate": "2021-10-21T20:56:18.181Z",
"testedBy": "Jack",
"testedDate": "2021-10-21T20:56:18.181Z",
"result": 110,
"comments": "Test has been completed and the LDL Cholestrol is in the normal range",
"lastUpdatedDate": "2021-10-21T20:57:49.4260767+00:00",
"lastUpdatedBy": "testuser1",
"patient": null,
"labResult": null,
"message": {
  "messageDescription": "Record has been created.",
  "messageCode": "100"
}
}
```

## Testing from Postman

New User : We can create new user by calling the below API4

<https://patientlabtestapi.azurewebsites.net/api/user>

### Input Request

```
{
  "userName": "username",
  "password": "password",
  "role": "Admin"
}
```

### Output Response

```
"messageDescription": "User has been created.",
"messageCode": "750"
}
```

### Generating the token

We need to generate the token by calling the below API

<https://patientlabtestapi.azurewebsites.net/api/user/validateuser>

Type : HttpPost

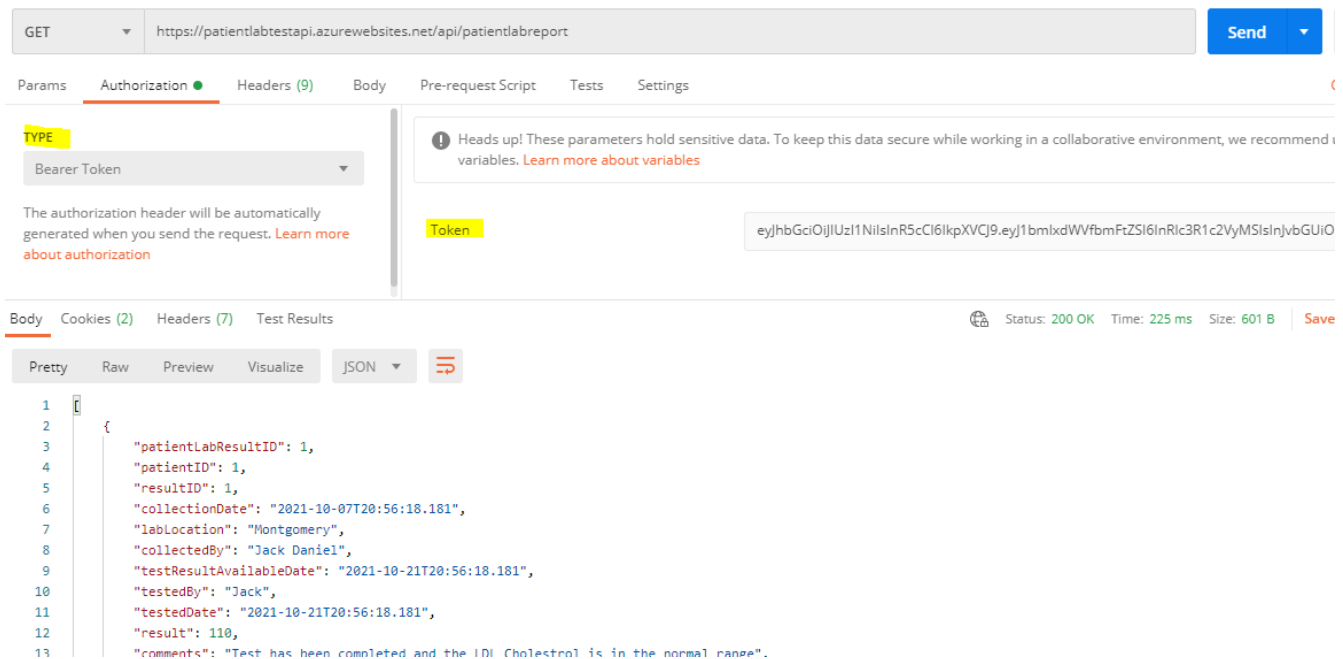
### Input Request

```
{
  "userName": "username",
  "password": "password"
}
```

### Output Response

eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJ1bm9ldWVfbmFtZSI6InRlc3Rlc2VyMSIsInJvbmGU0iOiJBZG1pb2IiIm5iZiI6MTYyNDg0ODg3MSwiZXhwIjoxNjM0ODUyNDcxLCJpYXQiOiJlM2MzQzNDg0NDZlF9.YhX55HCUZWWzF1ZxvCLnapivXEu6t2Cp2c-UDZnYwa0

If using postman, we need to add the Authorization token.



GET <https://patientlabtestapi.azurewebsites.net/api/patientlabreport> Send

Params Authorization Headers (9) Body Pre-request Script Tests Settings

**TYPE**

Bearer Token

The authorization header will be automatically generated when you send the request. [Learn more about authorization](#)

**Token**

eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJ1bm9udWVmbmFtZSI6InRlc3R1c2VyMSIsInJvbGUiOi

Heads up! These parameters hold sensitive data. To keep this data secure while working in a collaborative environment, we recommend variables. [Learn more about variables](#)

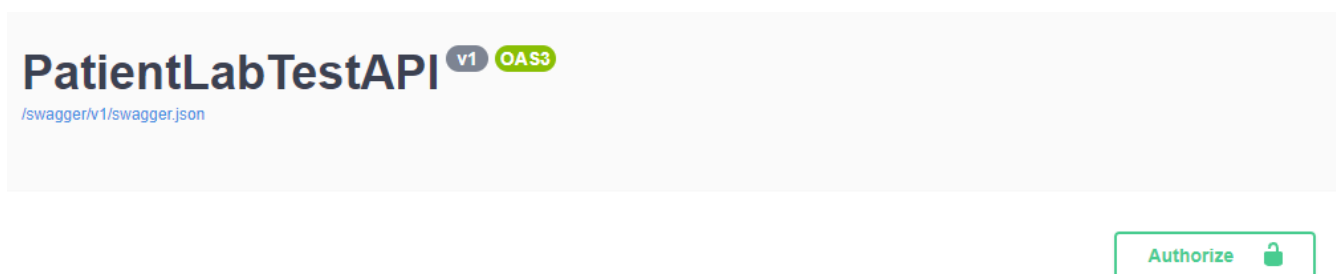
Body Cookies (2) Headers (7) Test Results

Status: 200 OK Time: 225 ms Size: 601 B Save

Pretty Raw Preview Visualize JSON

```
1 {
2   "patientLabResultID": 1,
3   "patientID": 1,
4   "resultID": 1,
5   "collectionDate": "2021-10-07T20:56:18.181",
6   "labLocation": "Montgomery",
7   "collectedBy": "Jack Daniel",
8   "testResultAvailableDate": "2021-10-21T20:56:18.181",
9   "testedBy": "Jack",
10  "testedDate": "2021-10-21T20:56:18.181",
11  "result": 110,
12  "comments": "Test has been completed and the LDL Cholesterol is in the normal range".
13 }
```

If using Swagger, we need to copy the token, then go to top right, and click the Authorize button.

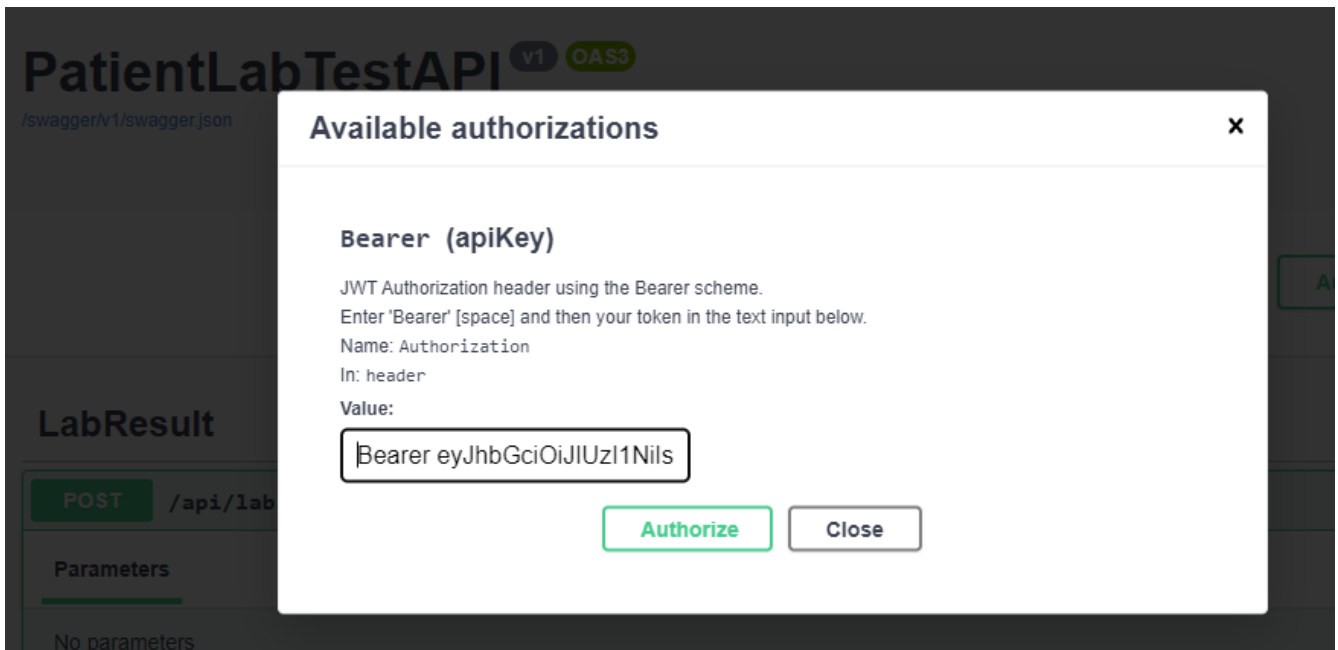


**PatientLabTestAPI** v1 OAS3

</swagger/v1/swagger.json>

Authorize

Then paste the token by adding the prefix “Bearer “.



Click “Authorize” button and now on wards we can test any API from the Swagger UI.