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Fingertips

An introduction to using Fingertips API



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Section 1: Overview

The purpose of this guide is to provide initial guidance on the use of Fingertips Application Programming Interface (API). This document has a practical focus and while no previous experience of working with an API is required, basic familiarity with the **Fingertips** site is desirable, as much of the terminology used in this guide comes from the Fingertips tool itself. The intention of this guide is, on one hand, to provide examples of problems you may want to solve with the API and, on the other, leave you with enough guidance to perform more complex operations in the future.

Upon reading this material, you should:

- have a basic understanding of what a Fingertips API call is and how it should be structured,
- be able to create a simple '**Data**' call and import the output into Excel,
- know where to look for additional parameters needed for more complex API calls

What is Fingertips API?

Fingertips API is an alternative method of retrieving public health data available on the **Fingertips** site. The main advantage of the API over the traditional '**Download**' option is the flexibility that it offers – you can create bespoke calls and get data for several indicators, from a number of Profiles, in one go. Data from the API can be also exported as JSON files and used seamlessly in other applications such as Power BI or Tableau. Fingertips API works in all major browsers (except Internet Explorer) and can be accessed via:

<https://fingertips.phe.org.uk/api>

API calls are grouped into five sections, namely: Areas, Data, Entities, IndicatorMetadata and Profiles. By clicking on '**List Operations**' next to the section heading (e.g. **Profiles**), you can see all calls within a single section. A brief description is at the right of the screen. To create a call, you should click on '**GET**' or the **URL**, e.g. **/api/profile**. You will then be presented with an API call builder, which lists the required parameters.

The screenshot shows the 'Profiles' section of the Fingertips API interface. At the top right, there are links for 'Show/Hide', 'List Operations', and 'Expand Operations'. Below this is a table of API calls:

Method	URL	Description	Action
GET	/api/profiles	Description of what the call does	Get all profiles
GET	/api/profile	Click to access a call	Get a specific profile by its ID
GET	/api/profile/by_key		Get a specific profile by its key

Indicator values can only be retrieved through calls available in the '**Data**' section of the API. Operations listed in other sections are there to help you tailor the calls, so that the API returns exactly what you need. In other words, these operations act as lookup tables, which contain identifiers needed to build more complex data requests.



Section 2: Key parameters

Most queries in Fingertips API rely on the input of some parameters, which specify the sub-set of data requested. These can be broadly divided into Profile and Geography-specific parameters, which are usually the ID numbers for these items in the underlying database. The parameters most frequently asked for in basic API calls are described below, together with information on where to find them, including respective lookup tables provided in the [Annex](#) to this guide.

Profile and indicator-specific identifiers

profile_id – unique numerical identifier of each Profile within Fingertips, e.g. **18** for the Local Tobacco Control Profiles

profile_key – unique textual identifier of each Profile within Fingertips, e.g. **‘tobacco-control’** for the Local Tobacco Control Profiles (as found in the URL on the tool: <https://fingertips.phe.org.uk/profile/tobacco-control>)

group_ids – unique numerical identifiers of individual topics within a Profile, e.g. **1938132890** for the ‘Smoking quitters’ topic in the Local Tobacco Control Profiles

indicator_ids – unique numerical identifiers of individual indicators, e.g. **91736** for ‘Smokers setting a quit date’; these can be also obtained from **‘Definitions’** view on the main site

Home > Introduction > Data [Further Information](#) [Frequently Asked Questions](#) [Technical Guidance](#) [Contact us](#) [Your data](#) ▾

Local Tobacco Control Profiles

Data view
Definitions ...

Geography
Counties & UAs (4/20-3/21) in North West region

Topic
Smoking quitters

Indicator
Smokers setting a quit date Crude rate - per 100,000 smokers aged 16+ ...

Indicator Definitions and Supporting Information

Indicator ID	91736
Date updated	02 Mar 2021
Indicator	Smokers setting a quit date
Definition	Rate of people setting a quit date per 100,000 smokers

Change Data view to **‘Definitions’** by clicking on the ellipsis (‘...’)



Geography-specific identifiers

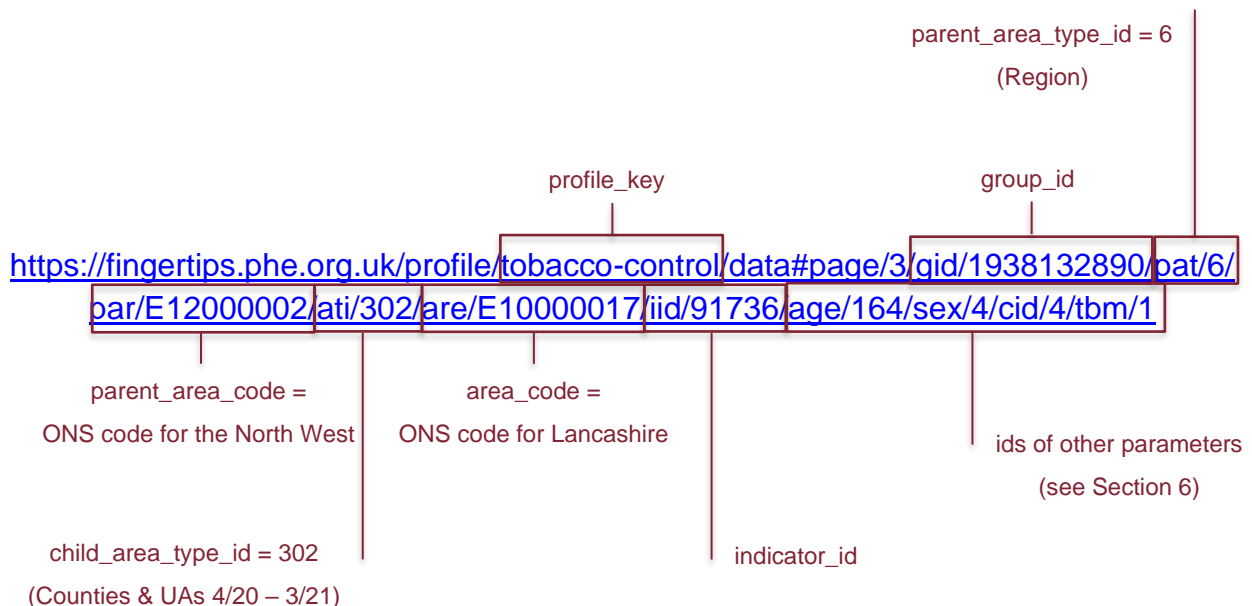
area_type_id (or **child_area_type_id**) – unique numerical identifier of the type of area you want to see the data for; these can be administrative or health geographies, e.g. **302** for Counties & UAs (4/20 – 3/21) or **7** for General Practices

parent_area_type_id – unique numerical identifier for the type of area to group areas by, e.g. **6** if you want to group Counties & UAs (4/20 – 3/21) by Region or **166** if you want to group General Practices by Clinical Commissioning Groups (2020/21)

area_code – code of a geographical entity, e.g. **P81029** for Ash Trees Surgery (NHS code), **E38000228** for Morecambe Bay CCG (ONS code) or **E08000002** for Bury (ONS code)

Note: Geography-specific parameters assume you have some knowledge of administrative and health geographies and that you are familiar with the relationships between different types of areas. You can use the AreaTypeIDs sheet of the [Annex](#) to find the identifiers for both **child_area_type_id** and **parent_area_type_id**.

You may also choose to get these identifiers from URLs generated whilst navigating individual Profiles. For example, if you wanted to explore the most recent data for the rate of ‘Smokers setting a quit date’ in Lancashire, compared to all other Counties & UAs (4/20 – 3/21) across the North West, you could do so by looking at the following page from the Local Tobacco Control Profiles:





Section 3: Fingertips API call builder

To make an API call, you should click on **'GET'** or the **URL**. The image below shows the structure of a typical Fingertips API call. Next to the **URL**, you can learn about the purpose of each call. Below are **'Implementation Notes'**, i.e. further explanations of how to use a service or interpret the results. Finally, towards the bottom is a listing of parameters needed for the call, together with a description of the data type expected for each parameter. More comprehensive calls rely on the input of several parameters, some of which are mandatory. To get a response, you should populate the required field(s) and click **'Try it out!'**

GET /api/profiles_containing_indicators

For each indicator lists the profiles that it is included in

Implementation Notes
A dictionary of indicator ID to a list of profiles

Description of what the query does

Response Class (Status 200)
OK

Model Example Value
{}

Parameters

Parameter	Value	Description	Parameter Type	Data Type
indicator_ids	(required)	List of indicator IDs	query	string
area_type_id	Optional parameter	Area type ID	query	integer

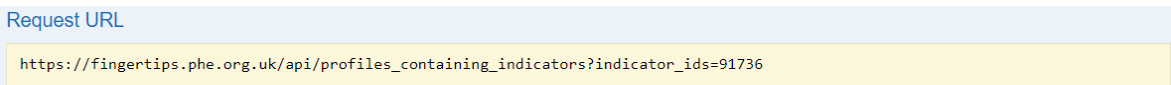
Try it out! — Makes the call



Section 4: API call response to Excel

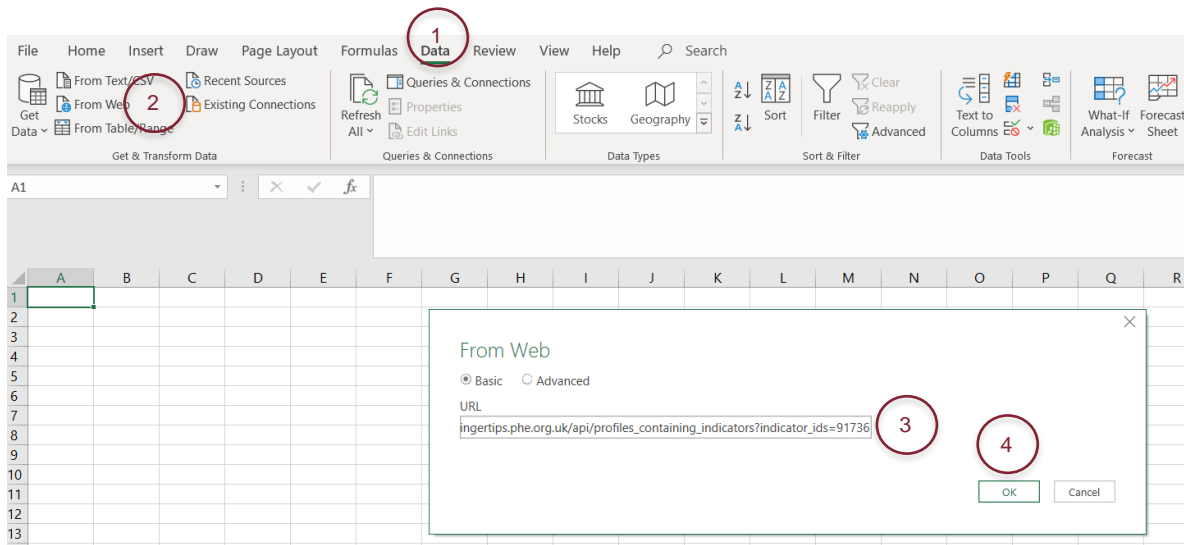
By default, responses are presented as JSON data. More complex calls are likely to produce longer responses. In such cases, you may have to scroll down the response body or perform a text search (Ctrl + F) to find the information you require.

Just above the **'Response body'** is a box containing the **'Request URL'**, representing the database query.



4.1 Importing JSON data into Excel

You can import JSON response data directly into a spreadsheet by selecting (in Excel): Data (1) -> From web (2) and then pasting the URL into the text box (3) and clicking **'OK'** (4), as in the example below:

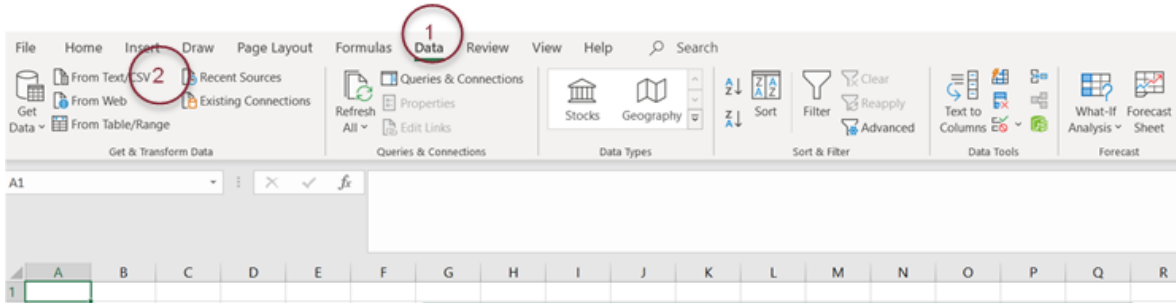


A Power Query editor should open, where you will be able to convert source data into a table, before importing the data into Excel or converting them to a range of cells (within Excel).



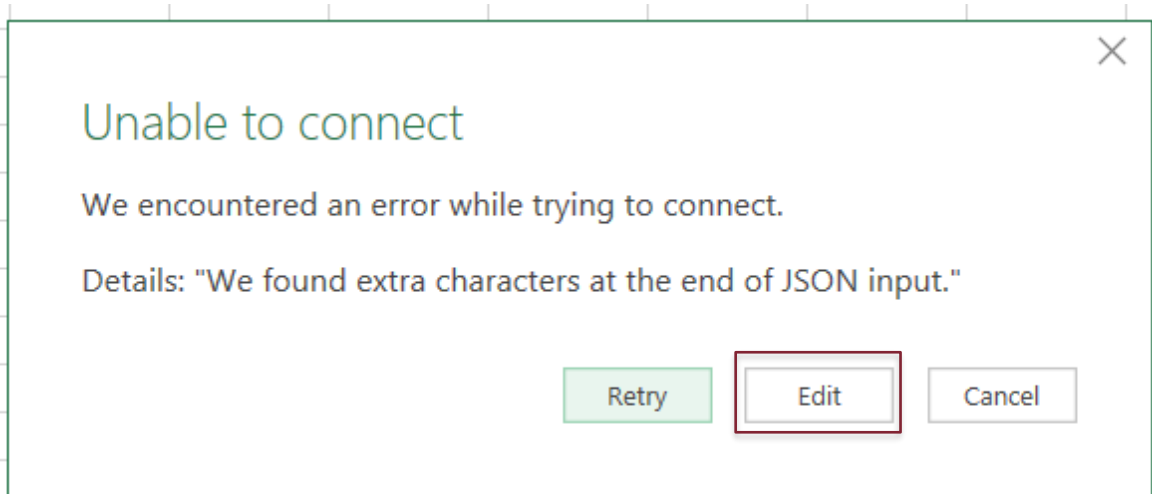
4.2 Saving JSON responses as text files and importing into Excel

You can also choose to save JSON output as a text file and import it into Excel. To do that, you should highlight and right-click on the **'Request URL'** and open it in a new tab. You should then select the data (Ctrl + A), copy them into a Notepad and save as a text file. To import a text file into Excel, you should select Data (1) -> From Text/CSV (2). Same steps can be applied when importing CSV files, e.g. downloaded from the Fingertips main site, into Excel.



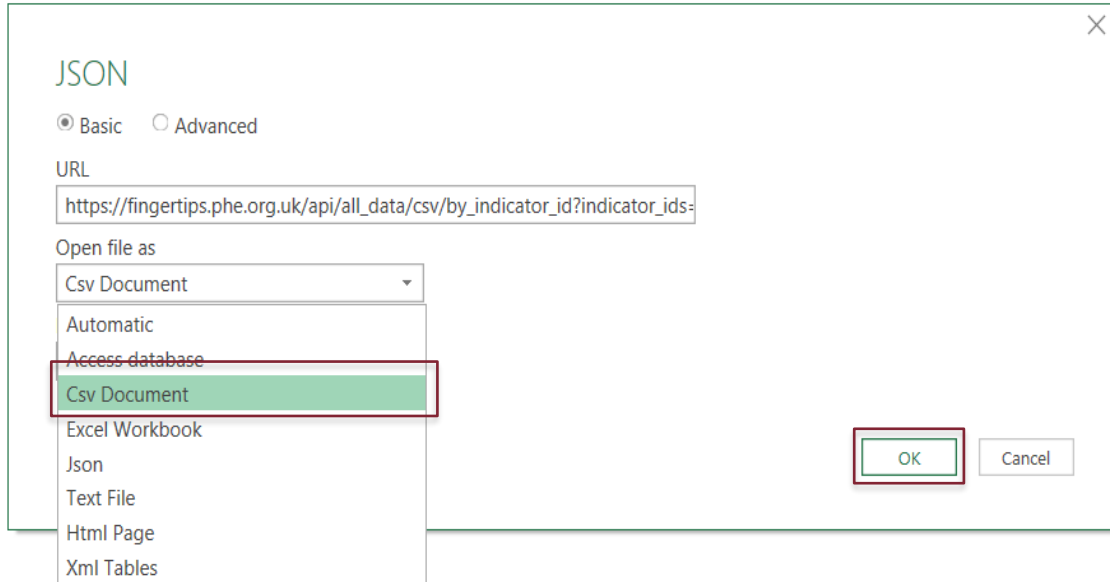
4.3 Importing data in other formats into Excel

The default format for API call returns is JSON. Contents of those responses are viewable in the response body and can be imported into Excel according to the steps described above. If no content is displayed in the response body, you should look at the **'Implementation Notes'** for explanation – in some cases (e.g. `/api/all_data/csv/by_indicator_id`), data are returned as CSV and may not be viewable on the call page. However, you can easily import these data into Excel by following the steps detailed in [Section 4.2](#).

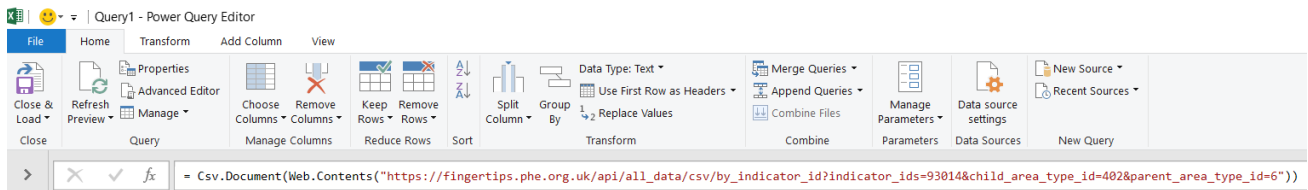




In case of an error message (see above), you should hit **'Edit'** and, from the drop down, choose to open the file as a CSV Document, then click **'OK'**. A preview of the data in the correct format should then appear.



Alternatively, you can import CSV data using Power Query. To open the Editor, click (in Excel): Data -> Get data -> From other sources -> Blank query. In the Editor, type in the following syntax into the formula bar: = Csv.Document(Web.Contents(**"Request URL"**)).



The Editor should then automatically promote headers and transform column types, after which a correctly formatted preview of the data should be displayed.

The steps above describe ways of importing API returns into Excel, as this is how users frequently handle data available in Fingertips. While similar steps can be followed in products from the MS suite (e.g. Power BI), it is beyond the scope of this guide to describe the process of importing data into all other packages. If you are struggling to use our API to load data into other software, please seek product-specific help in the first place.

Users more interested in programming may want to explore our bespoke packages (i.e. `fingertipsR` and `fingertips_py`), which use the API to load data into R or Python for further processing.



Section 5: Retrieving public health data using Fingertips API

The aim of this section is to demonstrate how to retrieve public health data through Fingertips API. This is achieved through a series of illustrated examples built around calls found in the 'Data' section of the API. This is the only section of the API from which indicator values can be downloaded. Other sections can be used alongside the [Annex](#) to find parameters required for more complex calls ([see Section 6](#)).

Example 1: Retrieving data for a specific indicator

Aim: Retrieve all available data for the percentage of individuals reporting a long-term Musculoskeletal (MSK) problem, for the current generation of Lower Tier Local Authorities (i.e. Districts & UAs), grouped by Region.

Data Show/Hide | List Operations | Expand Operations

GET /api/all_data/csv/by_indicator_id Get data for specific indicators in CSV format.

Implementation Notes
This service returns data in CSV not JSON format so the response will not be viewable on this page

Response Class (Status 200)
OK

Model **Example Value**

```
{}
```

Parameters

Parameter	Value	Description	Parameter Type	Data Type
indicator_ids	<input type="text" value="(required)"/>	Comma separated list of indicator IDs [Maximum 100]	query	string
child_area_type_id	<input type="text" value="(required)"/>	Child area type ID	query	integer
parent_area_type_id	<input type="text" value="(required)"/>	Parent area type ID	query	integer
profile_id	<input type="text"/>	Profile ID [optional]	query	integer
parent_area_code	<input type="text"/>	The parent area code [default is England]	query	string



Step 1: Find the relevant API call and see which parameters are required.

Step 2: Open the [Annex](#) and find identifiers for the required parameters:

- indicator_id: **93377**
- child_area_type_id¹: **401**
- parent_area_type_id¹: **6**

Alternatively, you can view the selected indicator in Fingertips and extract these parameters from the URL ([see Section 2](#)). To get the indicator_id, you can also see the **‘Definitions’** tab on the main Fingertips site.

Step 3: Populate the call builder with required parameters and click **‘Try it out!’**.

Parameters

Parameter	Value	Description	Parameter Type	Data Type
indicator_ids	<input type="text" value="93377"/>	Comma separated list of indicator IDs [Maximum 100]	query	string
child_area_type_id	<input type="text" value="401"/>	Child area type ID	query	integer
parent_area_type_id	<input type="text" value="6"/>	Parent area type ID	query	integer
profile_id	<input type="text"/>	Profile ID [optional]	query	integer
parent_area_code	<input type="text"/>	The parent area code [default is England]	query	string

[Hide Response](#)

Curl

```
curl -X GET --header 'Accept: application/json' 'https://fingertips.phe.org.uk/api/all_data/csv/by_indicator_id?indicator_ids=93377'
```

Request URL

```
https://fingertips.phe.org.uk/api/all_data/csv/by_indicator_id?indicator_ids=93377&child_area_type_id=401&parent_area_type_id=6
```

Response Body

no content

Look at the response body, if no content is displayed check **‘Implementation Notes’** or the **‘Response Code’** for potential errors. In this case, the call returns data in a CSV format which is not viewable on this page.

Step 4: Load data into Excel ([see Section 4](#)) or other software.

¹ Identifiers for both area types can be found in the same sheet of the [Annex](#) (i.e. AreaTypeIDs).



Example 2: Retrieving latest data for a group of indicators

Aim: Retrieve only the latest data, for all indicators in the 'Practice Summary' topic, for the general practice located on 68A Portsmouth Road, Woolston, Southampton, SO19 9AN.

Step 1: Find the relevant API call and see which parameters are required.

GET /api/latest_data/all_indicators_in_profile_group_for_child_areas Get the most recent data for a profile group

Response Class (Status 200)
OK

Model Example Value

```
[
  {
    "Grouping": [
      {
        "GroupingId": 0,
        "GroupId": 0,
        "SexId": 0,
        "AgeId": 0,
        "AreaTypeId": 0,
        "ComparatorId": 0,

```

Parameters

Parameter	Value	Description	Parameter Type	Data Type
profile_id	(required)	Profile ID	query	integer
group_id	(required)	Profile group ID	query	integer
area_type_id	(required)	Area type ID	query	integer
parent_area_code	(required)	Parent area code	query	string

Try it out!

Step 2: See which parameters you can get from the [Annex](#) and think where you could get any of the missing parameters from (think of a Fingertips Profile most likely to contain this information). Find the missing parameters.

Find your practice

Search by practice code, postcode or place name

SO19 9AN, Southampton



Step 3: Populate the call with the required parameters and click 'Try it out!'.

Parameters

Parameter	Value	Description	Parameter Type	Data Type
profile_id	<input type="text" value="20"/>	Profile ID	query	integer
group_id	<input type="text" value="2000005"/>	Profile group ID	query	integer
area_type_id	<input type="text" value="7"/>	Area type ID	query	integer
parent_area_code	<input type="text" value="J82128"/>	Parent area code	query	string

[Hide Response](#)

Curl

```
curl -X GET --header 'Accept: application/json' 'https://fingertips.phe.org.uk/api/latest_data/all_indicators_in_profile_group_for'
```

Request URL

```
https://fingertips.phe.org.uk/api/latest_data/all_indicators_in_profile_group_for_child_areas?profile_id=20&group_id=2000005&area_
```

Response Body

```
[
  {
    "Grouping": [
      {
        "GroupingId": 178518,
        "GroupId": 2000005,
        "SexId": 4,
        "AgeId": 28,
        "AreaTypeId": 7,
```

This call returns data in a JSON format, therefore contents of the response are viewable on this page.

Step 4: Load data into Excel (see Section 4) or other software.



Example 3: Retrieving trend data partitioned by category

Aim: Retrieve trend data partitioned by age, for the percentage of people aged 16-64 in employment, in Bath and North East Somerset (County & UA).

Step 1: Find the relevant API call and see which parameters are required.

GET /api/partition_trend_data/by_age Get trend data partitioned by age

Response Class (Status 200)
OK

Model | Example Value

```
{
  "Labels": [
    {
      "Id": 0,
      "Name": "string"
    }
  ],
  "TrendData": {},
  "Periods": [
    "string"
  ]
}
```

Parameter	Value	Description	Parameter Type	Data Type
profile_id	(required)	Profile ID	query	integer
area_code	(required)	Area code	query	string
indicator_id	(required)	Indicator ID	query	integer
sex_id	(required)	Sex ID	query	integer
area_type_id	(required)	Area type ID	query	integer

Try it out!

Step 2: Find the corresponding indicator_id in the [Annex](#). Look through the operations listed in the other sections of the API. Can you find a call that shows the Profile(s) an indicator is included in?

Step 3: Use the auxiliary API call (see below) to get the ID of the Fingertips Profile which contains the respective indicator.

GET /api/profiles_containing_indicators For each indicator lists the profiles that it is included in

Alternatively, you may want to search for this indicator on the main Fingertips page, see which Profile it appears in and use the [Annex](#) to get the ID of that Profile.

Step 4: Another required parameter is sex_id. Check if the indicator is calculated for persons, males or females and find the corresponding ID. Again, can you find an appropriate API auxiliary call?



Step 5: Find the area_code for Bath and North East Somerset and use the [Annex](#) to look up the correct area_type_id.

Step 6: Populate the call with the required parameters and click **‘Try it out!’**.

GET /api/partition_trend_data/by_age Get trend data partitioned by age

Response Class (Status 200)
OK

Model | Example Value

```
{
  "Labels": [
    {
      "Id": 0,
      "Name": "string"
    }
  ],
  "TrendData": {},
  "Periods": [
    "string"
  ]
}
```

Parameters

Parameter	Value	Description	Parameter Type	Data Type
profile_id	<input type="text" value="26"/>	Profile ID	query	integer
area_code	<input type="text" value="E06000022"/>	Area code	query	string
indicator_id	<input type="text" value="92313"/>	Indicator ID	query	integer
sex_id	<input type="text" value="4"/>	Sex ID	query	integer
area_type_id	<input type="text" value="202"/>	Area type ID	query	integer

[Hide Response](#)

Step 7: Import data into Excel ([see Section 4](#)) or other software.



Section 6: Beyond basic API calls – Q&A

The aim of this section is to demonstrate the use of auxiliary operations to retrieve additional parameters or facilitate the interpretation of API returns. If the return is long, you may need to scroll down the screen or use the search facility (Ctrl + F) to find what you need in the response body. By following these principles, you should be able to make more complex **‘Data’** requests using the API.

1. Can I get all the identifiers listed in the Annex using separate API calls?

Yes. For example, **GET /api/profiles**, listed under **‘Profiles’** on the main Fingertips API page, returns the names and identifiers of all Fingertips Profiles, together with the identifiers of the topics indicators are grouped into.

The screenshot shows the API response for the endpoint `https://fingertips.phe.org.uk/api/profiles`. The response body is a JSON array of objects. Two objects are highlighted with red boxes:

- The first object: `{ "Id": 18, "Name": "Local Tobacco Control Profiles", "Key": "tobacco-control", "GroupIds": [1938132885, 1938132886, 1938132900, 1938132887, 1938132888, 1938132889, 1938132890], "GroupMetadata": [{ "Id": 1938132885, "Name": "Key indicators", "Sequence": 1, "ProfileId": 18 }] }`. A red box around the `"Id": 18` is labeled **Profile_id**.
- The second object: `{ "Id": 1938132885, "Name": "Key indicators", "Sequence": 1, "ProfileId": 18 }`. A red box around the `"Name": "Key indicators"` is also labeled **Profile_id**.

Overlaid on the bottom right is a screenshot of the web interface for **Local Tobacco Control Profiles**. The interface shows a search bar, a filter for **Geography: Counties & UAs (4/20-3/21) in North West region**, and a comparison bar for **Compared with England** showing a **Best 50%** status. Below the comparison bar are options to **Display Values**, **Trends**, **Values & Trends**, and **Export table as image** or **Export table as CSV file**.

2. Can I extract data for indicators belonging to different Profiles in a single API call?

Yes. To do that, you should explore other operations listed in the **‘Data’** section of the API. Data for multiple indicators can be retrieved in a single API call, as long as all are available at a shared geography, for example Counties & UAs (4/20 – 3/21). Below are just two examples of API calls that facilitate the retrieval of data for multiple indicators in a single operation.

GET	/api/latest_data/specific_indicators_for_child_areas	Get the most recent data for a list of indicator IDs
GET	/api/latest_data/specific_indicators_for_single_area	Get the most recent data for a list of indicator IDs



3. Can I find the area_code if I know the area_type_id?

Yes. A list of area_type_ids is in the [Annex](#) (correct as at June 2021). For an up-to-date list of area_type_ids, you can also explore **GET /api/area_types**. You can then use the area_type_ids to populate the following call: **GET /api/areas_by_area_type**. The example below returns ONS codes and names for all Combined Authorities in England.

Request URL

```
https://fingertips.phe.org.uk/api/areas/by_area_type?area_type_id=126
```

Response Body

```
[
  {
    "Code": "E47000008",
    "Name": "CA-Cambs and Peterborough",
    "Short": "Cambs and Pboro",
    "AreaTypeId": 126
  },
  {
    "Code": "E47000001",
    "Name": "CA-Greater Manchester",
    "Short": "Greater Manchester",
    "AreaTypeId": 126
  },
  {
    "Code": "E47000004",
    "Name": "CA-Liverpool City Region",
    "Short": "Liverpool City Region",
    "AreaTypeId": 126
  },
  {
    "Code": "E47000000",
    "Name": "CA-Manchester City Region",
    "Short": "Manchester City Region",
    "AreaTypeId": 126
  }
]
```

ONS code for Greater Manchester Combined Authority

4. My data download contains columns that I find hard to interpret. For example, what does the age_id of 298 stand for?

Fingertips API, just like downloads from the main Fingertips site, returns significant amounts of data which are not always easy to interpret. These often contain additional information about an indicator, for example details of the age group for which an indicator is calculated. To find out what does the age_id of 298 stand for, you can explore the result of the following call: **GET /api/ages**. Here we can see that age_id of 298 corresponds to population aged 19 and over. You can access other lookup values (e.g. on how sex or polarity of an indicator is encoded in Fingertips) via the **'Entities'** section of the API.

Response Body

```
{
  "Id": 156,
  "Name": "15-24 yrs",
  "Sequence": 19.5
},
{
  "Id": 298,
  "Name": "19+ yrs",
  "Sequence": 19.5
},
{
  "Id": 297,
  "Name": "19-21 yrs",
  "Sequence": 20
}
```



5. Can I extract indicator metadata using the API, too?

Yes. To extract metadata for a single indicator in a CSV format, go to **GET /api/indicator_metadata/csv/by_indicator_id** and populate the call with the identifier of the indicator for which you want to retrieve the metadata. Other calls enable you to extract metadata for a group of indicators or even an entire Profile. Since the service returns data in CSV and not JSON format, the response is not viewable on the page and may need loading into Excel or other software ([see Section 4](#)).

Parameters

Parameter	Value	Description	Parameter Type	Data Type
indicator_ids	93014	Comma-separated list of indicator IDs	query	string
profile_id		Profile ID [optional]	query	integer

Try it out! [Hide Response](#)

Curl

```
curl -X GET --header 'Accept: application/json' 'https://fingertips.phe.org.uk/api/indicator_metadata/csv/by_indicator_id?indicator_ids=93014'
```

Request URL

```
https://fingertips.phe.org.uk/api/indicator_metadata/csv/by_indicator_id?indicator_ids=93014
```

Response Body

```
no content
```

6. Why should I use Fingertips API?

Fingertips API offers more flexibility than other means of downloading data from Fingertips. By embedding 'Request URLs' generated by the API, you can get real time data straight into your interactive reports, e.g. in Power BI. Users more interested in programming do not need to make API calls via the browser. Instead, they can connect to the API from within a programming environment via our dedicated packages: `fingertipsR` (R users) and `fingertips_py` (Python users).

Contact us

Your feedback helps us improve the quality of our products and services. Please contact us at ProfileFeedback@phe.gov.uk if you have any questions or comments about this guide or the API itself.

Version control

Version	Author	Date	Notes
1.0	Maciej Dobras	June 2021	First version



Section 7: Annex

This Annex contains the identifiers for the key parameters that are needed to make 'Data' calls using Fingertips API. It is a set of four lookup tables that cover:

- Fingertips Profiles (ProfileIDs)
- Topics within Fingertips Profiles (GroupIDs)
- Indicators (IndicatorIDs)
- Area types (AreaTypeIDs)

To find out unique identifiers for other parameters (e.g. age, sex, etc.), please explore the 'Entities' section of the API. These resources should give you enough guidance to perform most tasks with the API. The Annex can be accessed [here](#).

Please contact us at ProfileFeedback@phe.gov.uk if you have any comments or suggestions for improvements to this material.