Food Labelling API

Technical Documentation

Version 2.0.0

- **Developed by**: FN-NBRI (Food & Nutrition National Biosciences Research Infrastructure), Quadram Institute Bioscience, Norwich, UK
- **Contact Email:** fn-nbri@quadram.ac.uk
- **Base URL:** https://api.foodlabelling.quadram.ac.uk/
- **Dataset:** UK Food Labelling Dataset 2021
- **Date:** May 2026
- **Audience:** Developers, Integration Teams, Technical Reviewers

1. Overview

The Food Labelling API offers structured and programmatic access to the UK Food Labelling Dataset.

The API was developed by the FN-NBRI Group and is designed to provide reliable, machine-readable access to UK food labelling data.

1.1 Key Capabilities

Capability	Detail
Food retrieval by code	Retrieve a full nutritional record for any food by its unique food code
Food search by name	Search the dataset by food name — supports multi-word queries (all words must match, any order)
Bulk code lookup	Retrieve up to 100 food records in a single POST request; not-found codes returned separately
Bulk name search	Search up to 50 name queries in a single POST request; results grouped per search term with per-term count
Health status	Public endpoint reporting API status, database connectivity, dataset row count, and registered key count

1.2 Dataset Summary

Attribute	Value
Dataset name	UK Food Labelling Dataset
Nutrient fields	FoodCode, FoodName, Energy_KCAL, Protein, Fat, Carbohydrate
Special values	null (not available or not measured), numeric (measured value)

2. Authentication & Access

The Food Labelling API uses API key authentication to control access to protected endpoints. All data endpoints require a valid API key supplied via the X-API-Key HTTP request header. API keys are issued and managed by the FN-NBRI Group.

2.1 Obtaining an API Key

Access to the API is granted by contacting the FN-NBRI Group at fn-nbri@quadram.ac.uk. Upon approval, a unique API key is issued. Each key is associated with a registered email address and is subject to a rate limit (default: 1,000 requests per day).

2.2 Using Your API Key

Include your API key in every request to a protected endpoint using the following header:

```
X-API-Key: your_api_key_here
```

Example using cURL:

```
curl -X GET \
  "https://api.foodlabelling.quadram.ac.uk/food/01-001" \
  -H "X-API-Key: your_api_key_here"
```

Example using Python:

```
import requests

headers = {"X-API-Key": "your_api_key_here"}
r = requests.get("https://api.foodlabelling.quadram.ac.uk/food/01-001",
headers=headers)
print(r.json())
```

2.3 Rate Limiting

Each API key is subject to a default rate limit of 1,000 requests per day. This ensures fair use across all registered consumers. Higher limits are available on request for research or high-volume use cases. When the limit is reached, the API returns HTTP 429 Too Many Requests.

To request a higher rate limit, please contact the FN-NBRI Group at fn-nbri@quadram.ac.uk.

2.4 Unauthenticated Endpoints

Endpoint	Description
GET /health	Returns current API health status, database connectivity, dataset row count, and registered key count

3. Base URL & Versioning

All API requests are made to the following base URL:

```
https://api.foodlabelling.quadram.ac.uk/
```

The interactive API documentation is available at:

```
https://api.foodlabelling.quadram.ac.uk/docs
```

3.1 Access Points

Resource	URL
Public API	https://api.foodlabelling.quadram.ac.uk/
Interactive Documentation	https://api.foodlabelling.quadram.ac.uk/docs
Health Check	https://api.foodlabelling.quadram.ac.uk/health

4. Endpoint Reference

The Food Labelling API provides 4 data endpoints plus 1 utility endpoint. The table below summarises all available endpoints.

4.1 Utility Endpoints

Method	Endpoint	Auth	Description
GET	`/health`	No	API status, database connectivity, dataset row count, API key count

4.2 Food Data Endpoints

Method	Endpoint	Auth	Description
GET	`/food/{food_code}`	Yes	Retrieve a single food record by its unique food code
GET	`/food/name/{query}`	Yes	Search food items by name. Supports multi-word queries; all words must be present in any order

POST	`/food/bulk/codes`	Yes	Retrieve up to 100 food records by a list of food codes in a single request
POST	`/food/bulk/names`	Yes	Search up to 50 food names simultaneously; results grouped per search term with per-term count

5. Query Parameters

The following query parameters are supported by the relevant endpoints:

Parameter	Type	Default	Applies To	Description
`limit`	integer	10	Name search	Maximum number of results to return
`food_codes`	array	required	Bulk code lookup	List of food codes to retrieve (max 100)
`food_names`	array	required	Bulk name search	List of name search terms (max 50)
`exact_match`	boolean	false	Bulk name search	If true, requires exact name match (case-insensitive)
`limit_per_search`	integer	10	Bulk name search	Maximum results per search term (max 50)

6. Response Format & Data Schemas

All API responses are returned as JSON (application/json). Response structures are consistent across all endpoints.

6.1 Health Check Response

GET https://api.foodlabelling.quadram.ac.uk/health

```
{
  "status": "healthy",
  "database": "connected",
  "dataset_rows": 2500,
  "dataset_columns": 6,
  "api_key_count": 12
}
```

6.2 Food Record Response

GET https://api.foodlabelling.quadram.ac.uk/food/01-001


```
{
  "FoodCode": "01-001",
  "FoodName": "Cheddar cheese",
  "Energy_KCAL": 416.0,
  "Protein": 25.4,
  "Fat": 34.9,
  "Carbohydrate": 0.1
}
```


6.3 Name Search Response

GET https://api.foodlabelling.quadram.ac.uk/food/name/grilled%20salmon?limit=3


```
{
  "count": 2,
  "results": [
    {
      "FoodCode": "14-024",
      "FoodName": "Salmon, Atlantic, grilled",
      "Energy_KCAL": 215.0,
      "Protein": 24.2,
      "Fat": 13.0,
      "Carbohydrate": 0.0
    }
  ]
}
```


6.4 Bulk Code Lookup

POST https://api.foodlabelling.quadram.ac.uk/food/bulk/codes

Request body:


```
{
  "food_codes": ["01-001", "14-024", "99-999"]
}
```

Response:

```
{
  "found": [
    { "FoodCode": "01-001", "FoodName": "Cheddar cheese", "Energy_KCAL":
416.0, ... },
    { "FoodCode": "14-024", "FoodName": "Salmon, Atlantic, grilled",
"Energy_KCAL": 215.0, ... }
  ],
  "not_found": ["99-999"]
}
```

6.5 Bulk Name Search Response

POST https://api.foodlabelling.quadram.ac.uk/food/bulk/names

Request body:

```
{
  "food_names": ["grilled salmon", "cheddar cheese"],
  "exact_match": false,
  "limit_per_search": 5
}
```

Response:

```
{
  "results": {
    "grilled salmon": [
      { "FoodCode": "14-024", "FoodName": "Salmon, Atlantic, grilled", ...
}
    ],
    "cheddar cheese": [
      { "FoodCode": "01-001", "FoodName": "Cheddar cheese", ... }
    ]
  },
  "summary": { "grilled salmon": 1, "cheddar cheese": 1 },
  "total_searches": 2,
  "total_results": 2
}
```

6.6 FoodItem Schema

Field	Type	Description
`FoodCode`	string	Unique identifier for the food item
`FoodName`	string	Descriptive name as published in the dataset
`Energy_KCAL`	float|null	Energy in kilocalories per 100g food
`Protein`	float|null	Protein content in grams per 100g food
`Fat`	float|null	Total fat content in grams per 100g food
`Carbohydrate`	float|null	Total carbohydrate content in grams per 100g food

Fields with no available measurement are returned as null rather than zero.

7. Error Handling

The API uses standard HTTP status codes to communicate the outcome of every request. All error responses return a JSON body with a detail field describing the issue.

7.1 Error Response Format

```
{
  "detail": "Food code not found."
}
```

7.2 HTTP Status Codes

Status Code	Status	When Returned
200	OK	Request was successful and results are returned
403	Forbidden	The API key is missing, invalid, or has been deactivated
404	Not Found	The requested food_code does not exist in the dataset
422	Unprocessable Entity	The request body is malformed or fails validation
503	Service Unavailable	The database is unreachable or the food dataset has not loaded
500	Internal Server Error	An unexpected server-side error occurred

8. Code Examples

8.1 Python — Get a Food Record by Code

```
import requests

API_KEY  = "your_api_key_here"
BASE_URL = "https://api.foodlabelling.quadram.ac.uk"
headers  = {"X-API-Key": API_KEY}

r = requests.get(f"{BASE_URL}/food/01-001", headers=headers)
food = r.json()
print(food["FoodName"], food["Energy_KCAL"], "kcal")
```

8.2 Python — Multi-Word Name Search

```
import requests

headers = {"X-API-Key": "your_api_key_here"}
BASE_URL = "https://api.foodlabelling.quadram.ac.uk"

# Finds items containing BOTH 'grilled' AND 'salmon'
r = requests.get(
    f"{BASE_URL}/food/name/grilled salmon",
    headers=headers,
    params={"limit": 10}
)
data = r.json()
print(f"Found {data['count']} results")
for item in data["results"]:
    print(item["FoodName"], "-", item["Energy_KCAL"], "kcal")
```

8.3 Python — Bulk Code Lookup

```
import requests

headers  = {"X-API-Key": "your_api_key_here"}
BASE_URL = "https://api.foodlabelling.quadram.ac.uk"

codes = ["01-001", "14-024", "18-001", "99-999"]
r = requests.post(
```

```
    f"{BASE_URL}/food/bulk/codes",
    headers=headers,
    json={"food_codes": codes}
)
data = r.json()
print(f"Found: {len(data['found'])}, Not found: {data['not_found']}")
```

8.4 Python — Bulk Name Search

```
import requests

headers  = {"X-API-Key": "your_api_key_here"}
BASE_URL = "https://api.foodlabelling.quadram.ac.uk"

r = requests.post(
    f"{BASE_URL}/food/bulk/names",
    headers=headers,
    json={
        "food_names": ["grilled salmon", "mature cheddar", "brown rice"],
        "exact_match": False,
        "limit_per_search": 5
    }
)
data = r.json()
for term, results in data["results"].items():
    print(f"{term}: {len(results)} results")
```

8.5 cURL — Get a Food Record

```
curl -X GET \
  "https://api.foodlabelling.quadram.ac.uk/food/01-001" \
  -H "X-API-Key: your_api_key_here"
```

8.6 cURL — Name Search

```
curl -X GET \

"https://api.foodlabelling.quadram.ac.uk/food/name/grilled%20salmon?limit=5"
\
  -H "X-API-Key: your_api_key_here"
```

9. Security & Compliance

The Food Labelling API has been designed and implemented with security and good practice principles at its core.

9.1 Authentication & Access Control

Access to data endpoints is protected by API key authentication. Keys are issued only to registered users and can be deactivated by the FN-NBRI Group if required. The API enforces per-key rate limiting to prevent abuse and ensure fair access for all consumers.

9.2 Dataset Licence

The CoFID API and the data it serves are licensed under the **Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International Licence (CC BY-NC-SA 4.0)**. The full licence text is available at:

```
https://creativecommons.org/licenses/by-nc-sa/4.0/
```

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If your use case is not explicitly permitted by this licence, please contact the FN-NBRI Group to discuss special permission: fn-nbri@quadram.ac.uk

10. Contact & Support

The Food Labelling API is developed and maintained by the FN-NBRI Group. For enquiries regarding:

- API key registration and access requests
- Rate limit adjustments for research or high-volume use cases
- Technical integration support
- Dataset licensing and usage rights
- Reporting issues or unexpected API behaviour

Please contact the FN-NBRI Group directly at Quadram Institute Bioscience, Norwich.

Email: fn-nbri@quadram.ac.uk. Interactive API documentation and endpoint testing is available via the Swagger UI at:

```
https://api.foodlabelling.quadram.ac.uk/docs
```