



## Background, access and use of Intake24 at Cambridge

[Intake24.org](https://intake24.org)

### Summary

Intake24 is an open-source web-based dietary assessment research tool based on the 24 hour recall method, it is primarily designed for self-completion<sup>1</sup>. Originally developed by Newcastle University, [Intake24.org](https://intake24.org)<sup>2</sup> is provided, maintained and developed by the [MRC Epidemiology Unit](https://www.mrc.ac.uk/units/mrc-epidemiology-unit) at the University of Cambridge, working in collaboration with the technical founder, Open Lab, Newcastle University.

Intake24.org (hosted by Cambridge University) is freely available for researchers to use where an existing available version is suitable for the needs of the research, and where further customisation and changes to the tool's configuration and/or content of the embedded food databases are not required. Different versions of Intake24 are available for use in the UK and other countries (see below)<sup>3</sup>. There is potential for further tool customisation, including the format of questions, and coverage of key foods. Similarly, there is scope to adapt the tool for new research purposes and/or use in new populations or settings. Such work can be taken forward in collaboration with Cambridge or potentially independently and will require resource and funding (see below).

The provision and ongoing development of Intake24 for the UK (available via [Intake24.org](https://intake24.org)) is currently driven and supported primarily through the [UK National Diet and Nutrition Survey Rolling Programme \(NDNS RP\)](https://www.ndns.ac.uk/) for which the MRC Epidemiology Unit is the scientific lead<sup>4</sup>. The NDNS RP contributes to the ongoing maintenance and development of [Intake24.org](https://intake24.org), including the embedded UK food and nutrient composition databases, for the purposes of the survey. The development of [Intake24.org](https://intake24.org) is also supported by other initiatives<sup>5</sup>. Our current work programme includes a complete re-write and upgrade of the Intake24 programming code (see below).

In addition to the UK version, Intake24 has been configured for use in [other populations and settings](#). Recent work led by our Unit includes the development of Intake24 for South Asia (covering Sri Lanka, India, Pakistan and Bangladesh) for use

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<sup>1</sup> An interviewer led format is also available, but may require customisation for use

<sup>2</sup> Intake24 was initially developed by Newcastle University in conjunction with Food Standards Scotland. [Intake24.org](https://intake24.org) is the instance of Intake24 that is provided, managed, maintained and developed by Cambridge University, working in conjunction with Open Lab, Newcastle University. Newcastle and Cambridge Universities are working together to provide, support and further develop Intake24 for use in the UK and other locations. Our institutions have agreed that all new approaches for use and/or development of Intake24 will be coordinated via Cambridge University.

<sup>3</sup> Different question schemes are available, as well as different food databases, further detail is available by contacting Cambridge: [intake24support@intake24.org](mailto:intake24support@intake24.org)

<sup>4</sup> The NDNS RP is funded by [Office for Health Improvement and Disparities](https://www.gov.uk/government/organisations/office-for-health-improvement-and-disparities) and [Food Standards Agency](https://www.foodstandards.gov.uk/)

<sup>5</sup> Other initiatives include the [Cambridge NIHR Biomedical Research Centre, Patient Populations Programme](https://www.cam.ac.uk/research/centres/cambridge-nihr-biomedical-research-centre) and work led by the Unit for the South Asia Biobank Study.

in the [South Asia Biobank Study](#) and creation of a clinician report tool to support piloting use of Intake24 in clinical settings. We have also recently worked with researchers at The George Institute for Global Health, Australia to support adaptation of an earlier version created for New Zealand for use in a survey in Fiji.

## Use of Intake24

Intake24.org is available for research use, free of charge in the currently available standard versions and configuration options (i.e. where use does not necessitate further customisation, development, adaptation or technical support). This includes online access to:

- UK locale version of Intake24.org as per the publically available live UK version at time of use. The format is aligned with the version used in the [NDNS RP](#)
- [South Asia locale version](#) (covering Sri Lanka, India, Pakistan and Bangladesh)
- other locale versions of Intake24: New Zealand, Portugal, Denmark, UAE, Australia<sup>6</sup>, Fiji are potentially available, however further support may be required to facilitate this

Intake24.org primarily operates as a [dietary recall](#) and can be specifically configured (without charge) for individual research studies to:

- Use of a region-appropriate locale (as per availability)
- Set/limit number of recalls expected
- Edit basic study information (welcome and final pages within the recall)
- Set participant dietary feedback to on or off<sup>7</sup>
- Set the number of recalls that must be completed before feedback is provided
- Time-window for recall data collection
- Link to an external online questionnaire<sup>8</sup>

Recalls can be collected over any time period and at whatever frequency intervals required. Single unique URL links can be generated by researchers for individual participants, containing embedded username and authentication token to avoid a 2-step signing in process.

The system provides instant online access to [data outputs](#) (in standard format) which can be downloaded independently by researchers for their study.

Intake24 does not include a participant request/reminder management system, this has to be managed independently and researchers generally take their own responsibility for dietary data management. If recall tracking is required, this can be facilitated using the recall data outputs. For example, researchers may integrate data

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<sup>6</sup> Developed and provided by Monash University, Australia.

<sup>7</sup> Feedback is set system-wide and is as per configuration for NDNS RP. Feedback content cannot currently be tailored at study level or between the UK or other country versions provided via [Intake24.org](#)

<sup>8</sup> It is possible to pass participant identifiable credentials via Intake24 to another questionnaire/system; this may require a small adaptation



on recalls obtained via Intake24 data output with other data systems or set up a database to automate and facilitate recall tracking and requests more efficiently in real time. Note, if data management support is required, this would incur a charge.

Study teams take their own responsibility for dietary data processing. This may include the need for coding missing foods (reported by participants). We are able to share procedures used in NDNS RP, on request. Alternatively, support for dietary data processing (e.g. QA/QC checks, including resolving and coding missing foods) can be requested from our [Dietary Assessment Platform](#). This would be costed and charged for, and may be capacity dependent.

If you are interested in setting up a study on Intake24 please email: [intake24support@intake24.org](mailto:intake24support@intake24.org)

## Citing Intake24

To help maintain support for Intake24, documenting its use through publications is very useful, we ask that you include the following statement in your publications:

**“Dietary intake data were collected using Intake24.org (LOCALE VERSION<sup>9</sup>, YEAR-YEAR): an open source dietary assessment research tool, freely available to researchers, maintained and developed by the Nutrition Measurement Platform, MRC Epidemiology Unit, University of Cambridge, in collaboration with Open Lab, Newcastle University.”**

In addition to the above, when citing Intake24, please use the website '<https://intake24.org>', and you may wish to consider citing one of the [Intake24 development and evaluation publications](#).

## Ongoing updates to Intake24

There is an ongoing programme of updates to Intake24.org, particularly for UK food databases (including participant food lists, portion information and food and nutrient composition data). This work is carried out according to the needs and timelines of NDNS RP. Updates are made available to the public UK version of Intake24.org at intervals. Other locale versions may also be updated, driven by other research initiatives. Researchers using Intake24.org will be notified of major changes.

## IT / technical support

Intake24.org is hosted and provided under standard web [terms and conditions](#) by Cambridge University and is supported day-to-day by the MRC Epidemiology Unit's

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<sup>9</sup> The name of the locale version will be provided when we email confirmation of study setup



in-house technical, dietary assessment and IT support teams, generally working in standard office hours. We are not presently in the position to offer 24-hour technical support or out-of-hours call-out services to support use of Intake24.org for your research.

As standard, patching for the Unit's IT systems is undertaken weekly, and specifically for Intake24, updates are generally patched monthly on a scheduled Friday morning (10am-12pm); during this time there may be some minimal interruption to service. There may also be occasional disruption to services for essential maintenance outside these times. Problems and issues with Intake24.org are infrequent. In the unlikely event that an issue occurs, or if more extensive work is required, we will endeavour to notify external researchers using the system and to respond to system issues as soon as possible.

If you are using the Intake24 system and experience any difficulty, please contact us via [intake24support@intake24.org](mailto:intake24support@intake24.org) or using the individual contact details at the bottom of this document.

## Data management

Data collected via Intake24.org is stored in databases held on a number of virtual servers owned and managed by the MRC Epidemiology Unit, hosted by Cambridge University. Access to Intake24.org data is restricted and controlled to study-specific named researchers and Unit technical staff for monitoring and maintenance purposes.

Research participant access to a study on Intake24.org is closed when their study participation or the study has completed. Researchers can access their study/studies on Intake24 at any time during data collection and for a minimum period of 3 months after study completion.

Studies and the respective recall data may be retained on the Intake24.org servers when completed, however Cambridge University does not commit to store recall data collected through Intake24.org indefinitely. At Cambridge University's discretion, researcher access to studies may be closed after study completion, at which time access to the collected dietary data on the Intake24.org server will no longer be possible. At least 1 months' notice will be given (by email) to named study researchers ahead of closing researcher access to a specific study. Study dietary data may be permanently deleted from the Intake24 servers at Cambridge University's discretion following notice to the researcher.

Researchers who are using Intake24.org must ensure that no personally identifiable information relating to study participants is uploaded or stored on Intake24.org. We have systems in place to identify and reject or remove any personally identifiable information relating to participants. We adhere to the [Cambridge University Privacy Policy](#) in relation to handling requests for access or deletion of Intake24 data.



Study researchers' names and email contact details are input and retained within Intake24.org for the purposes of facilitating access to their specific study; this information is necessary to manage study setup and ongoing administration. We also use these contact details to communicate and update with researchers using Intake24.org, such as to notify about any issues (e.g. the tool being offline) and to provide general updates on relevant Intake24 developments. Cambridge University Privacy Policy and [information compliance](#) policies apply.

## Adaptation of Intake24 and development for new populations and settings, including other countries

Intake24 is fully open source and the system can be adapted and customised through collaboration or independently. Adaptation may require programming and preparation of food databases and will therefore require resource. At this time (particularly prior to completing the upgrade of the Intake24 system code-base, see below), it is likely to be more feasible and efficient if adaptation / customisation is carried out by or in collaboration with experienced programmers who are familiar with detail of the Intake24 system.

Customisation may include:

- Adaptation to questions and functionality
- Updates to food databases
- Development of a new locale version for a new population or setting (see below)
- Support for data-interface/data management for use within a large-scale study/survey

Intake24 is a web-based application so access to the internet is required for use. There are limited circumstances in which `offline` local access can be provided. Currently, offline provision may be feasible for interviewer/local-site based fieldwork. Support would be required (costed and charged).

Our [Dietary Assessment Platform](#) (potentially in conjunction with Newcastle Open Lab) is interested in and has a core objective to support further development of Intake24. We welcome approaches to discuss via [intake24support@intake24.org](mailto:intake24support@intake24.org) or using our contact details at the bottom of this guide. Development work would require funding and may be capacity dependent. Work maybe provided through a service contract or research collaboration as appropriate.

Versions of Intake24 are already available for a number of countries including New Zealand and Australia<sup>10</sup> and, with translation, Portugal, Denmark and the UAE. Our platform has recently also developed a version of Intake24 in English for use in four South Asia regions: Sri Lanka, India, Bangladesh and Pakistan for the South Asia Biobank Study. Access to use and/or for further development of these locale versions may be possible to facilitate on request.

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<sup>10</sup> Australian version developed and provided by Monash University, Australia.



The scale of work involved to support a new adaptation of Intake24 for a new population/setting or research use will depend on requirements. This will likely include the availability of appropriate food data as well as other system adaptations including language translation. This work will therefore require resource/funding.

Please contact us to discuss further: [intake24support@intake24.org](mailto:intake24support@intake24.org)

## Ongoing development of Intake24 (2019-2023)

Intake24.org was built and developed in Cambridge by the MRC Epidemiology Unit, in collaboration with the Newcastle Intake24-founding team Open-Lab, and with consultancy advice from Dr Emma Foster (formerly of Newcastle University).

Supported by the NDNS RP and other initiatives<sup>11</sup>, we are working in collaboration with Open Lab to technically update and improve the programming of the Intake24 tool. This will optimise configuration for use on mobile phones and tablets and will make the tool more readily customisable and adaptable for ongoing use in the NDNS RP and other research. The overall aim is to ensure the tool is future proof and to facilitate easier development and adaptation ongoing, including the potential for greater internationalisation for use in new populations and settings. Through the NDNS RP we are also carrying out a programme of rationalisation and updates to the UK food and nutrient composition databases embedded in Intake24.org.

An updated version of Intake24.org is expected to be available in 2023. All Intake24 system developments are available on an open-source basis.

If you are interested in using Intake24.org for your research, please contact us:

### Contact details:

[intake24support@intake24.org](mailto:intake24support@intake24.org)

Polly Page	<a href="mailto:polly.page@mrc-epid.cam.ac.uk">polly.page@mrc-epid.cam.ac.uk</a>
Caireen Roberts	<a href="mailto:caireen.roberts@mrc-epid.cam.ac.uk">caireen.roberts@mrc-epid.cam.ac.uk</a>
Toni Steer	<a href="mailto:toni.steer@mrc-epid.cam.ac.uk">toni.steer@mrc-epid.cam.ac.uk</a>

Dietary Assessment: Nutrition Measurement Platform, MRC Epidemiology, University of Cambridge: <https://www.mrc-epid.cam.ac.uk/research/measurement-platform/>

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<sup>11</sup> Other initiatives include the [Cambridge NIHR Biomedical Research Centre, Patient Populations Programme](#) and work led by the Unit for the South Asia Biobank Study.