



# **LONI IMAGE & DATA ARCHIVE USER MANUAL**

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# LONI Image & Data Archive

## INTRODUCTION

The LONI Image & Data Archive (IDA) is a user-friendly environment to archive, search, share, track and disseminate neuro-imaging data. It accommodates MRI, fMRI, PET, MRA, DTI and other imaging modalities. A flexible data de-identification engine and encrypted file transmission help ensure compliance with patient-privacy regulations. All data are stored on redundant servers with daily and weekly on- and off-site backups. Archiving data in the IDA is simple, secure and requires no specialized hardware or software. The IDA automatically extracts relevant metadata from de-identified image files, and allows data to be searched within moments of archival. Once archived, data can be downloaded and/or streamed into the LONI Pipeline workflow environment for processing and analysis. Integration of the LONI Debabeler file format translation engine allows users to download image data in a number of common file formats.

### IMAGE & DATA ARCHIVE (IDA)

Institute for Neuroimaging and Informatics  
Keck School of Medicine  
University of Southern California  
2001 North Soto Street, SSB! - 102,  
Los Angeles, CA 90033  
Phone: 323-442-7246  
Fax: 323-442-0137  
<https://ida.loni.usc.edu>

For questions or problems with the IDA, please e-mail [dba@loni.usc.edu](mailto:dba@loni.usc.edu)

## ACKNOWLEDGEMENTS

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# LONI Image & Data Archive

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# LONI Image & Data Archive

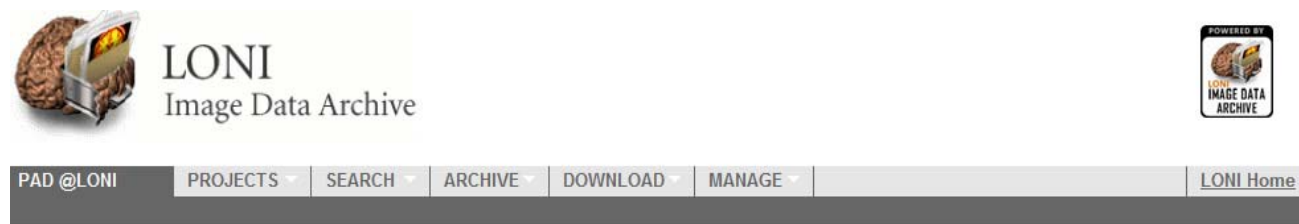
## A – IMAGE & DATA ARCHIVE OVERVIEW

The LONI Image & Data Archive (IDA) provides an integrated and safe environment to archive neuro-imaging data. The archive protects data from unauthorized access and allows investigators to share data. For questions or problems with the IDA, please e-mail [dba@loni.usc.edu](mailto:dba@loni.usc.edu)

### System Requirements:

The IDA system requires a computer with internet access, newer web browser software (IE, Netscape, Mozilla, Safari, Chrome), Java plug-in (version 1.5 or higher), and a valid user account.

### IDA Menu Overview



### Projects:

- *All:* View participant gender and research group distribution on public projects and other private projects you are permitted to access. Public projects such as PAD are available to all users.
- *Individual Projects:* View project information and participant gender distribution from your project.

### Search:

- *Simple Image Search:* Database queries based on a limited set of subject and image parameters.
- *Advanced Image Search:* Database queries using a more extensive list of parameters. Limited to authorized users on a project-by-project basis.

### Archive:

- *Archive Files:* De-identify images to remove potentially identifying subject information, and securely transmit files to be stored in the LONI Image & Data Archive.

### Download:

- *Image Collections:* Download individual images or entire collections.
- *Study Data:* Download study data for selected projects.

### Manage:

- *Edit metadata:* Provide or modify subject-related information such as sex, age and weight.
- *Delete data:* Remove images from the LONI Image and Data Archive. Available to users with higher access levels.
- *Image QC:* Quality-control of imaging data. Available to users with higher access levels.
- *Project Summary:* View project upload and download summary information. Available to users with higher access levels.
- *Manage user access:* Grant or modify user's privileges. Available to project leaders.

### Note:

Available submenus vary depending on project and user access level.



# LONI Image & Data Archive

## USER REGISTRATION

If you do not have a user account, click **REGISTER** on the Image & Data Archive Log-In page.  
<https://ida.loni.usc.edu>

Complete the form to create a new account then click the **REGISTER** button.

Once the registration process is complete, a confirmation email will be sent with a temporary password and login instructions.



## LONI Image & Data Archive

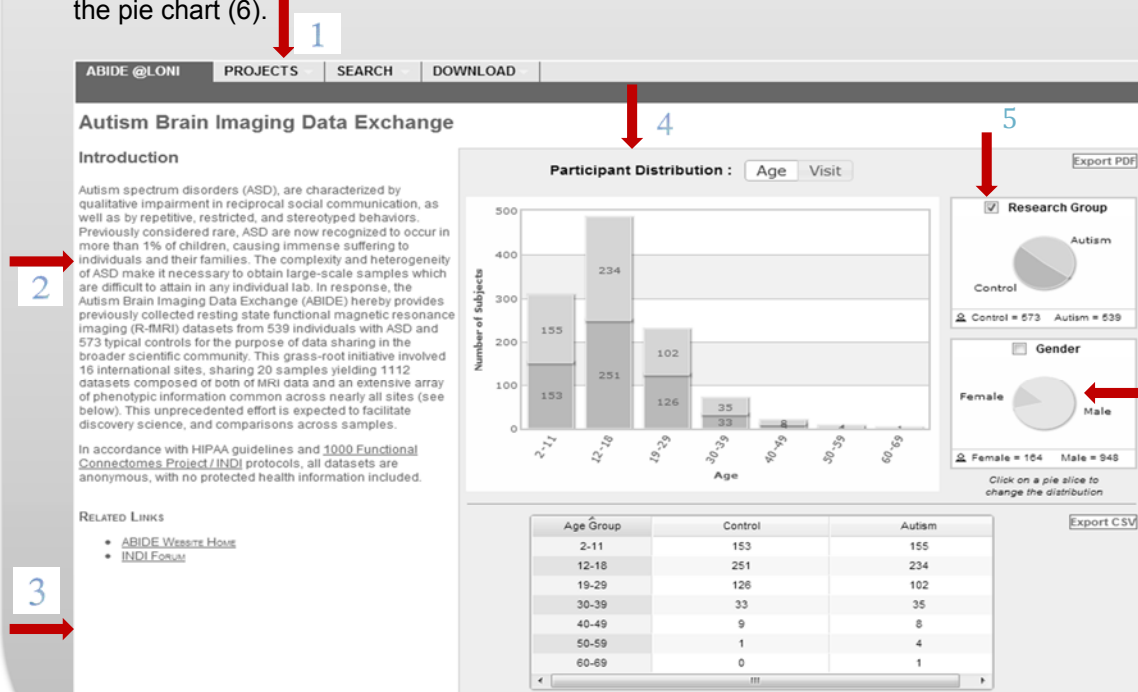
### Image & Data Archive Log-In

#### Note:

If you are experiencing difficulty with access, notify [dba@loni.usc.edu](mailto:dba@loni.usc.edu).

Select a project from the Projects menu (1).

The Projects menu displays a description of the project (2), project-related links (3), and a chart showing participant distribution (4). You may view a break-down of the distribution based on research group and gender by selecting the checkbox in the corresponding chart (5). To remove an individual group from the participant distribution chart, click on the corresponding section of the pie chart (6).





# LONI Image & Data Archive

## B – SEARCH

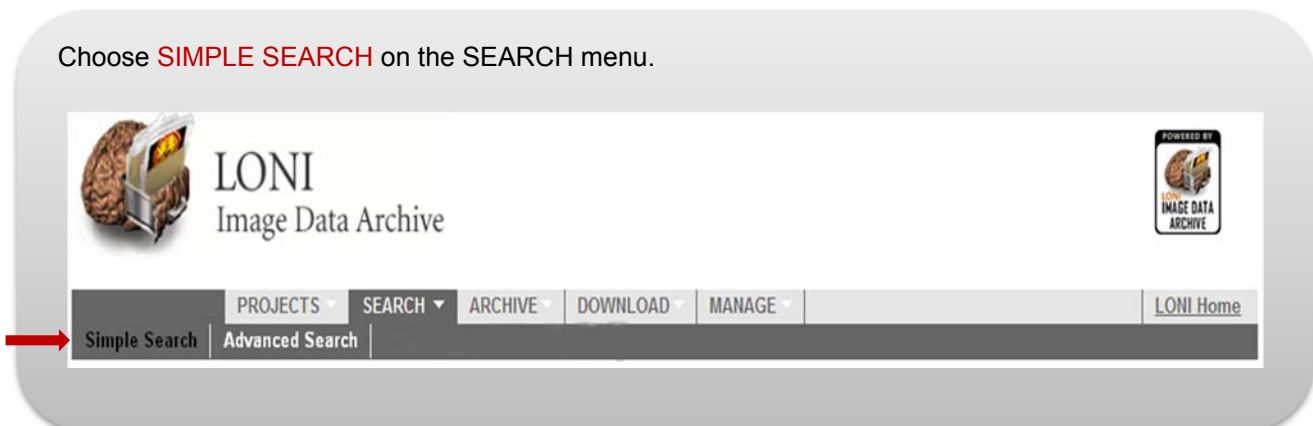
Users can search for images based on subject and image-related criteria, view images, form collections and download images. There are two types of image searches: Simple search and Advanced search. The Simple Search performs a basic database query on subjects and images, providing information such as subject age, sex and image modality or series description. The Advanced Search supports a more extensive exploration of the database and provides additional information about subjects and images. To download images, perform a Simple or Advanced Search, add the images to a data collection then download. To access processed images, use the Advanced Search.

## SEARCH AND DOWNLOAD DATA GRAPHIC OVERVIEW



## SIMPLE SEARCH

Choose **SIMPLE SEARCH** on the SEARCH menu.



Note: Available menu options vary based on project and user access level.



# LONI Image & Data Archive

Enter the search criteria and click **SEARCH**

## IDA Search

LEGEND: Projects | Research Groups | Modalities | Help | View Collections | Image Status

Search **Data Collections**

Enter your selection criteria using the form below:

SUBJECT INFORMATION		IMAGE INFORMATION	
Subject ID: <input type="text"/>	Leave blank unless searching for a specific subject.	Modality: MRI ▾	
Sex: Both ▾		Series Description: <input type="text"/>	
Age: Equals ▾ <input type="text"/> years		Weighting: ▾	
		Slice Thickness: Equals ▾ <input type="text"/> mm	
		Acquisition Plane: ▾	

**SEARCH RESULTS**

Order By: ▾ and then by: ▾ Image Count: 500 ▾



Click **VIEW** to see an image using the IDA Image Viewer.

## IDA Search

LEGEND: Projects | Research Groups | Modalities | Help | View Collections | Image Status

Search **Search Results** Data Collections

3 image sets match your criteria: Sex = Both; Modality = MRI; Image count = 500

Your access level: ADNI (DBA), ADNIP (MANAGER), APOE (MEMBER), BEPI (GUEST), CRYO (MANAGER), GEMS (DBA), GIBT (MANAGER), HVLMS (LEADER), ICBM (MANAGER), PAD (LEADER), SFIC (MEMBER), SIMS (DBA)  
Access to data is controlled by each project's leader. Click the Projects link above for additional information.

(1 of 1) < prev 1 next >

Subject	Research Group	Sex	Scan Date	Age	Modality	Series Description	Weighting	Slice Thickness	Acquisition Plane	Status	View*	Select All
PAD_0001	Control	M	3/11/1995	22	MRI	T1-FFE	T1	1.0	SAGITTAL	A	<input type="button" value="VIEW"/>	<input type="checkbox"/>
PAD_0002	Control	M	4/04/1995	19	MRI	T1-FFE	T1	1.0	SAGITTAL	A	<input type="button" value="VIEW"/>	<input type="checkbox"/>
PAD_0003	Control	F	3/18/1995	19	MRI	T1-FFE	T1	1.0	SAGITTAL	A	<input type="button" value="VIEW"/>	<input type="checkbox"/>

\*Clicking the view icon launches the LONI Image Viewer. The viewer requires a Java-enabled browser with [Java Plug-in 1.4.2](#) or newer installed.



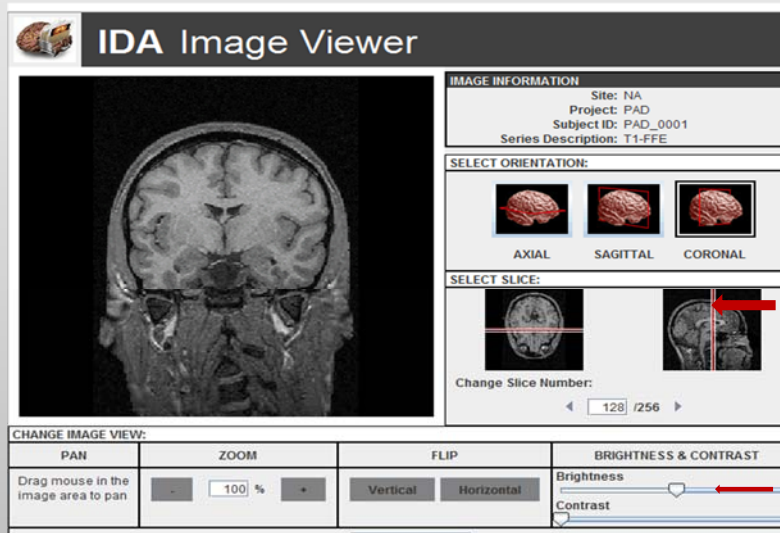


# LONI Image & Data Archive

## VIEW IMAGES

The IDA Image Viewer provides a multi-dimensional reconstruction of the image data. Users can view an image in different orientations, flip vertical and horizontal planes and adjust brightness and contrast. Currently, the image viewer works on 3-D images only. Only the first time point appears on 4-D images.

To view different slices, drag one of the red bars on the **SELECT SLICE** section.



## ADVANCED SEARCH

Use the Advanced Search to query the database using a more extensive list of elements than the Simple Search. Choose additional elements or image types, original or processed data, and set the sort order of the results. The availability of elements varies according to project and user access level. You may save queries to be reused.

Choose **ADVANCED SEARCH** from the SEARCH menu.





# LONI Image & Data Archive

Complete the form sections.

- To display specific categories in the SEARCH CRITERIA, check the corresponding checkbox in SEARCH OPTIONS (1).
- To display specific information on the Results menu (the next page), check **DISPLAY IN RESULTS** (2). Some items display by default.
- Click **SEARCH** (3).

1

2

3

## DEFINITIONS:

- Original data refers to raw image files.
- Processed data refers to registered or warped data (e.g. segmentations).
- To select more than one item in a drop-down, click each item while holding down the control key on PC or Command key on Mac).



# LONI Image & Data Archive

## Advanced Search Results

The Search Results tab displays information about image sets matching the search criteria. Users can view and add these results to collections, and save search parameters (page 12). The Series Description of each image is a link to the detail page, which provides additional information about the image such as weighting, pulse sequence, acquisition type, etc. Users can also view images from the Image Protocol Details page.

- Check the checkbox beside **VIEW** (1) and then select **ADD TO COLLECTION** (2) to add images to a collection. This is a necessary step before downloading the image(s) (see page 14).
- To view image header information/ imaging protocol, select an image **DESCRIPTION** (3). This will open the IMAGE DATA DETAILS interface.

Displaying Results 1-20 of 8135

1 image selected

Select All

Add To Collection

SUBJECT		STUDY			IMAGE			
Select	Subject ID ▾	Sex	Select	Age	Select	View	Description	
<input checked="" type="checkbox"/>	MNI_0101	F	<input checked="" type="checkbox"/>	24.0	<input checked="" type="checkbox"/>	<a href="#">VIEW</a>	<a href="#">T1-FFE</a>	
<input type="checkbox"/>	MNI_0102	M	<input type="checkbox"/>	29.0	<input type="checkbox"/>	<a href="#">VIEW</a>	<a href="#">T1-FFE</a>	
<input type="checkbox"/>	MNI_0103	M	<input type="checkbox"/>	22.0	<input type="checkbox"/>	<a href="#">VIEW</a>	<a href="#">T1-FFE</a>	
<input type="checkbox"/>	MNI_0104	M	<input type="checkbox"/>	35.0	<input type="checkbox"/>	<a href="#">VIEW</a>	<a href="#">T1-FFE</a>	
<input type="checkbox"/>	MNI_0105	M	<input type="checkbox"/>	31.0	<input type="checkbox"/>	<a href="#">VIEW</a>	<a href="#">T1-FFE</a>	
<input type="checkbox"/>	MNI_0106	M	<input type="checkbox"/>	31.0	<input type="checkbox"/>	<a href="#">VIEW</a>	<a href="#">T1-FFE</a>	
<input type="checkbox"/>	MNI_0107	M	<input type="checkbox"/>	21.0	<input type="checkbox"/>	<a href="#">VIEW</a>	<a href="#">T1-FFE</a>	
<input type="checkbox"/>	MNI_0108	M	<input type="checkbox"/>	26.0	<input type="checkbox"/>	<a href="#">VIEW</a>	<a href="#">T1-FFE</a>	
<input type="checkbox"/>	MNI_0109	M	<input type="checkbox"/>	19.0	<input type="checkbox"/>	<a href="#">VIEW</a>	<a href="#">T1-FFE</a>	
<input type="checkbox"/>	MNI_0110	M	<input type="checkbox"/>	28.0	<input type="checkbox"/>	<a href="#">VIEW</a>	<a href="#">T1-FFE</a>	
<input type="checkbox"/>	MNI_0111	F	<input type="checkbox"/>	26.0	<input type="checkbox"/>	<a href="#">VIEW</a>	<a href="#">T1-FFE</a>	
<input type="checkbox"/>	MNI_0112	M	<input type="checkbox"/>	23.0	<input type="checkbox"/>	<a href="#">VIEW</a>	<a href="#">T1-FFE</a>	
<input type="checkbox"/>	MNI_0113	F	<input type="checkbox"/>	24.0	<input type="checkbox"/>	<a href="#">VIEW</a>	<a href="#">T1-FFE</a>	
<input type="checkbox"/>	MNI_0114	F	<input type="checkbox"/>	20.0	<input type="checkbox"/>	<a href="#">VIEW</a>	<a href="#">T1-FFE</a>	



On the **IMAGE DATA DETAILS** page display an image by selecting **VIEW**. The image will open in the IDA image viewer (page 9).

### Image Data Details

LEGEND: [Projects](#) | [Research Groups](#) | [Modalities](#) | [Help](#) | [View Collections](#) | [Image Status](#)

T1-FFE		Subject ID: MNI_0101	
Modality	: MRI	Research Group	: Control
Image Type	: Original	Sex	: Female
Image File Type	: Image Volume	Visit	: N/A
Acquisition Protocol			
Image Status	: AVAILABLE <a href="#">VIEW</a>		
Imaging Protocol : Acquisition Plane=SAGITTAL; Acquisition Type=3D; Coils: Field Strength=1.5 tesla; Flip Angle=30.0 degree; Manufacturer=Philips; Matrix X=172.0 pixels; Matrix Y=25 Spacing Y=-1.0 mm; Pulse Sequence=: Slice Thickness=-1.0 mm; TE=10.0 ms; TI=0.0 ms; TR=18.0 ms; Weighting=T1;			

Note: Processed images display an additional section describing information such as package name, process name, program name, etc.



# LONI Image & Data Archive

## SAVE QUERIES

Any search generated with the Advanced Search can be saved and re-used. Users can query the database with saved searches for repeated use in analysis and comparison.

Click **SAVE QUERY** on the Advanced Search Results tab.

**Advanced Search: Results**

10 record(s) matched your search criteria: *Subject Sex=All; Image Status=User Quarantine; Subject Id=UCLA\_1234; Modality=MRI; Image Type=Original; Maximum Image count=500*

Click **SAVE QUERY** to save the query. Click **ADD TO COLLECTION** to add selected image sets to your collection. Click **NEW SEARCH** to return to the search page.

SUBJECT	STUDY	IMAGE
Select <input type="checkbox"/>	Select <input type="checkbox"/>	Select <input type="checkbox"/>
UCLA_1234	21.0	Circle Scout
		gre field map
		Matched Bandwidth Hi-Res
		SAG DOUBLE ECHO
		SAG MPAGE 8 CHANNEL
		SAG MPAGE 8 CHANNEL
		SAG MPAGE 8 CHANNEL
		SAG MPAGE 8 CHANNEL
		SAG MPAGE 8 CHANNEL
		Three Plane Loc-trufisp

Note: To select an individual image series, click the select box under **IMAGE** or click the box under **STUDY** or **SUBJECT** to select all series in the study or for the subject. Click **RESET** to uncheck the checkboxes on this page.

Previous 1 Next

**SAVE QUERY** **NEW SEARCH** **ADD TO COLLECTION**

The Save Query pop-up appears.

- Provide a new query name (1) and description (2).
- Click **SAVE QUERY** (3).

**Save Query**

Enter a name for the query.

Enter the query description.

Click the **SAVE QUERY** button to save this query or Click the **CANCEL** button to return to the results page without saving the query.

**SAVE QUERY** **CANCEL**

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# LONI Image & Data Archive

## DETAILS:

- Once a search has been saved, a drop-down list appears on the Advanced Search submenu.

To run a saved query, select the query from the saved query drop-down list.

The screenshot shows the LONI Image Data Archive website. The header includes the LONI logo and navigation links: PAD @LONI, PROJECTS, SEARCH, ARCHIVE, DOWNLOAD, and MANAGE. Below the header, there are tabs for Simple Search and Advanced Search. The main heading is 'Image Database: Advanced Search'. Below this, there is a text box with instructions: 'Choose a saved query or Specify your selection criteria in the form below. Hold down "Ctrl" & Click to select or deselect multiple options. Wild cards (\*) are permitted in fields marked with a \* in the form below. For example, UCLA\* returns records where the value begins with "UCLA"'. Below the text box, there is a 'SAVED QUERY' section with a dropdown menu labeled 'Select saved query'. A red arrow points to this dropdown menu. Below the dropdown menu, there is a 'SUBJECT INFORMATION' section with a 'Subject Id\*' field and a 'SEARCH' button. The 'SUBJECT INFORMATION' section also includes a 'PAD' button.

## C – IMAGE COLLECTIONS

### OVERVIEW

The Collections Interface provides access to existing collections and their individual components. Users can view, remove, regroup or download single images and entire collections. This level of interaction applies both to personal collections and shared collections, those created by other users to which the user has access.

Users can create collections with an unlimited number of images. It is not necessary to perform a search to access previously created collections. Collections can be restructured by adding or removing images.

### Features:

- Access Personal data collections.
- Download Any number of images with a single request.
- Download images in a number of file formats, including the originally archived format, or an alternate format of the user's choice (Analyze, NiftI, 4D, MINC)
- Track downloaded/ not downloaded images.
- Access shared collections (Created by other users).



# LONI Image & Data Archive

## CREATE IMAGE COLLECTIONS AND DOWNLOAD

Use the Image Collections submenu to manage and download data selected through Simple and Advanced Searches. Create new collections, add to previously created collections, or change collections as needed. Use collections for viewing, downloading and sharing imaging data.

Perform a **Simple** or **Advanced** Search (see page 7).

- On the Search Results page, choose images by checking the Select box beside the image(s) (1).
- Click **ADD TO COLLECTION** (2).

Subject	Research Group	Sex	Scan Date	Age	Modality	Series Description	Weighting	Slice Thickness	Acquisition Plane	Status	View*	Select All
MNI_0500	Control	M	5/25/2002	62	MRI	SAG DUAL TSE OLD WAY	PD	2.0	SAGITTAL	Q1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
						SAG DUAL TSE OLD WAY	PD	2.0	SAGITTAL	Q1	<input type="checkbox"/>	<input type="checkbox"/>
						SAG DUAL TSE OLD WAY	PD	2.0	SAGITTAL	Q1	<input type="checkbox"/>	<input type="checkbox"/>
						SAG DUAL TSE OLD WAY	PD	2.0	SAGITTAL	Q1	<input type="checkbox"/>	<input type="checkbox"/>
						SAG DUAL TSE OLD WAY	PD	2.0	SAGITTAL	Q1	<input type="checkbox"/>	<input type="checkbox"/>
						SAG DUAL TSE OLD WAY	PD	2.0	SAGITTAL	Q1	<input type="checkbox"/>	<input type="checkbox"/>
						SAG DUAL TSE OLD WAY	PD	2.0	SAGITTAL	Q1	<input type="checkbox"/>	<input type="checkbox"/>
MNI_0501	Control	F	5/25/2002	41	MRI	SAG DUAL TSE OLD WAY	PD	2.0	SAGITTAL	Q1	<input type="checkbox"/>	<input type="checkbox"/>
						SAG DUAL TSE OLD WAY	PD	2.0	SAGITTAL	Q1	<input type="checkbox"/>	<input type="checkbox"/>
						SAG DUAL TSE OLD WAY	PD	2.0	SAGITTAL	Q1	<input type="checkbox"/>	<input type="checkbox"/>
						SAG DUAL TSE OLD WAY	PD	2.0	SAGITTAL	Q1	<input type="checkbox"/>	<input type="checkbox"/>
						SAG DUAL TSE OLD WAY	PD	2.0	SAGITTAL	Q1	<input type="checkbox"/>	<input type="checkbox"/>
						SAG DUAL TSE OLD WAY	PD	2.0	SAGITTAL	Q1	<input type="checkbox"/>	<input type="checkbox"/>
						SAG DUAL TSE OLD WAY	PD	2.0	SAGITTAL	Q1	<input type="checkbox"/>	<input type="checkbox"/>
MNI_0502	Control	F	5/25/2002	45	MRI	SAG DUAL TSE OLD WAY	PD	2.0	SAGITTAL	Q1	<input type="checkbox"/>	<input type="checkbox"/>

- Enter a name for the collection or select an existing collection name (1).
- Click **OK** (3).

2 images selected

Regroup Collection

Select a existing collection:

OR

Enter a name for the collection:

Ok Cancel



# LONI Image & Data Archive

- A new window displays the collection contents.
- To view the image, click on the **DESCRIPTION** link.
- A new window opens. Click **VIEW** under Acquisition Protocol (not shown).

Search Data Collections

**COLLECTIONS**  
Expand a collection by clicking on the + symbol.

Collections  
My Collections  
+ MArS4 (3)  
+ brin1 (21)  
+ presentation (6)

**ACTIONS**  
Select items below by clicking the select box(es). Choose an action to perform on selected items.

Collection: ucla30s 0 images selected

Subject	Group	Sex	Age	Visit	Modality	Description	Type	Acq Date	Format	Downloaded	All
UCLA_1231	Control	M	63	0	MRA	tot_63d_tra-Multislab_MIP COR	Original	9/05/2006	DCM	<input type="checkbox"/>	
UCLA_1131	Control	M	21	0	MRA	tot_63d_tra-Multislab_MIP COR	Original	9/14/2007	DCM	<input type="checkbox"/>	

- Instead, to download, select images or entire collections by selecting the checkbox beside an image (1) or checking the All box (2).

Search Data Collections

**COLLECTIONS**  
Expand a collection by clicking on the + symbol.

Collections  
My Collections  
- MArS4 (2)  
- Not Downloaded (0)  
- Downloaded (2)  
+ brin1 (20)  
+ presentation (6)  
+ sag2 (1)  
+ seventeens (6)  
+ ucla30s (2)  
My Shared Collections

**ACTIONS**  
Select items below by clicking the select box(es). Choose an action to perform on selected items.

Collection: MArS4 2 images selected

Subject	Group	Sex	Age	Visit	Modality	Description	Type	Acq Date	Format	Downloaded	All
PAD_0002	Control	M	19	0	MRI	T1-FFE	Original	4/04/1995	IMG	<input checked="" type="checkbox"/>	
PAD_0001	Control	M	22	0	MRI	T1-FFE	Original	3/11/1995	IMG	<input checked="" type="checkbox"/>	

- Choose file download format, either as originally archived or converted to MINC, Analyze, NIfTI or NIfTI 4D by choosing the corresponding button in the Actions section (1). Click **DOWNLOAD** (2).
- A new window opens. Provide the download location. The files will download to the selected location.

Search Data Collections

**COLLECTIONS**  
Expand a collection by clicking on the + symbol.

Collections  
My Collections  
- MArS4 (2)  
- Not Downloaded (0)  
- Downloaded (2)  
+ brin1 (20)  
+ presentation (6)  
+ sag2 (1)

**ACTIONS**  
Select items below by clicking the select box(es). Choose an action to perform on selected items.

Collection: MArS4 2 images selected

Subject	Group	Sex	Age	Visit	Modality	Description	Type	Acq Date	Format	Downloaded	All
PAD_0002	Control	M	19	0	MRI	T1-FFE	Original	4/04/1995	IMG	<input checked="" type="checkbox"/>	
PAD_0001	Control	M	22	0	MRI	T1-FFE	Original	3/11/1995	IMG	<input checked="" type="checkbox"/>	



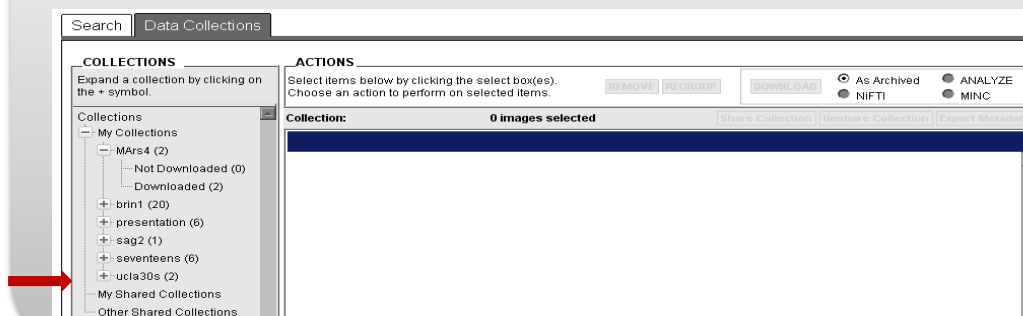


# LONI Image & Data Archive

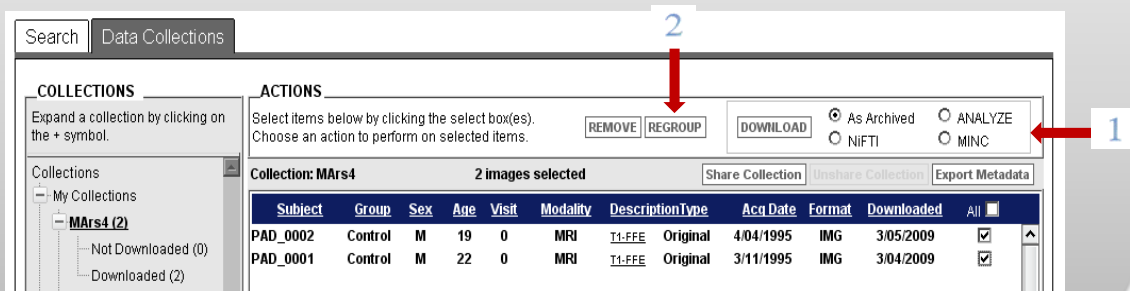
## DETAILS:

- Converting file formats adds slightly to the overall download time.
- For each image downloaded, an **XML** file containing metadata about the subject and the image is placed in the root of the download directory.
  - See **Appendix** for an example of an **XML** file.

To view a collection, click on the collection name.



To move an image or group of images to a new or different collection, check the appropriate checkbox beside the image(s) (1) and click **REGROUP** (2).



A dialogue box appears. Select an existing collection or enter a new name for the collection (1) and click **OK** (2).







# LONI Image & Data Archive

The new regrouped collection appears.

The screenshot shows the LONI Data Collections interface. On the left, a tree view under 'My Collections' shows 'Mars4 (1)' expanded, with sub-items 'Not Downloaded (0)' and 'Downloaded (1)'. Below it, 'Mars43 (1)' is listed with 'Not Downloaded (0)'. The main panel shows 'Collection: Mars43' with '0 images selected'. Above the table are buttons for 'REMOVE', 'REGROUP', and 'DOWNLOAD'. To the right are radio buttons for 'As Archived' (selected), 'NIFTI', 'ANALYZE', and 'MINC'. Below these are buttons for 'Share Collection', 'Unshare Collection', and 'Export Metadata'. The table below has columns: Subject, Group, Sex, Age, Visit, Modality, DescriptionType, Acq Date, Format, Downloaded, and All. The first row is: PAD\_0001, Control, M, 22, 0, MRI, T1-FFE, Original, 3/11/1995, IMG, 3/04/2009, and a checkbox.

Subject	Group	Sex	Age	Visit	Modality	DescriptionType	Acq Date	Format	Downloaded	All	
PAD_0001	Control	M	22	0	MRI	T1-FFE	Original	3/11/1995	IMG	3/04/2009	<input type="checkbox"/>

## SHARE COLLECTIONS

Click **SHARE COLLECTION** if you want to allow other users to view your collections.

The screenshot shows the LONI Data Collections interface. On the left, a tree view under 'My Collections' shows 'Mars4 (2)' expanded, with sub-items 'Not Downloaded (0)' and 'Downloaded (2)'. Below it are several sub-collections: 'brin1 (20)', 'presentation (6)', 'sag2 (1)', 'seventeens (6)', and 'ucla30s (2)'. The main panel shows 'Collection: Mars4' with '2 images selected'. A red arrow points to the 'Share Collection' button. Above the table are buttons for 'REMOVE', 'REGROUP', and 'DOWNLOAD'. To the right are radio buttons for 'As Archived' (selected), 'NIFTI', 'ANALYZE', and 'MINC'. Below these are buttons for 'Share Collection', 'Unshare Collection', and 'Export Metadata'. The table below has columns: Subject, Group, Sex, Age, Visit, Modality, DescriptionType, Acq Date, Format, Downloaded, and All. The first two rows are: PAD\_0002, Control, M, 19, 0, MRI, T1-FFE, Original, 4/04/1995, IMG, 3/05/2009, and a checked checkbox; and PAD\_0001, Control, M, 22, 0, MRI, T1-FFE, Original, 3/11/1995, IMG, 3/04/2009, and a checked checkbox.

Subject	Group	Sex	Age	Visit	Modality	DescriptionType	Acq Date	Format	Downloaded	All	
PAD_0002	Control	M	19	0	MRI	T1-FFE	Original	4/04/1995	IMG	3/05/2009	<input checked="" type="checkbox"/>
PAD_0001	Control	M	22	0	MRI	T1-FFE	Original	3/11/1995	IMG	3/04/2009	<input checked="" type="checkbox"/>

A dialogue box appears. It is possible to grant different access levels to other users who can view your collection. Guest is the minimum access level to view the collection.



## LONI Image & Data Archive

Choose the user access level for your collection then click **SHARE**.

2 images selected

Share Collection Unshare Collection

Choose the permissions that others need to access your collection.

Minimum Level: Guest

Guest  
Member  
Leader  
Manager

Share Cancel

To remove other users' access to your collection click **UNSHARE COLLECTION**.  
The collection is no longer seen by others

Edit Collection Unshare Collection Export Metadata

Acq Date	Format	Downloaded	All
4/04/1995	IMG	3/05/2009	<input type="checkbox"/>

To remove an image from your collection, click the checkbox beside the image (1), or click the **All** checkbox (2) to remove the entire collection, then click **REMOVE** (3).

Search Data Collections

COLLECTIONS

Expand a collection by clicking on the + symbol.

Collections

- My Collections
  - + Mars4 (2)
  - + brint (20)
  - + presentation (6)
  - + sag2 (1)
  - + seventeens (6)
  - + ucla30s (2)
- My Shared Collections
- Other Shared Collections

ACTIONS

Select items below by clicking the select box(es).  
Choose an action to perform on selected items.

REMOVE REGROUP DOWNLOAD

Collection: Mars4 1 image selected

Subject	Group	Sex	Age	Visit	Modality	DescriptionType	Acq Date	Format	Downloaded	All	
PAD_0002	Control	M	19	0	MR	11FFE	Original	4/04/1995	IMG	3/05/2009	<input checked="" type="checkbox"/>
PAD_0001	Control	M	22	0	MR	11FFE	Original	3/11/1995	IMG	3/04/2009	<input type="checkbox"/>



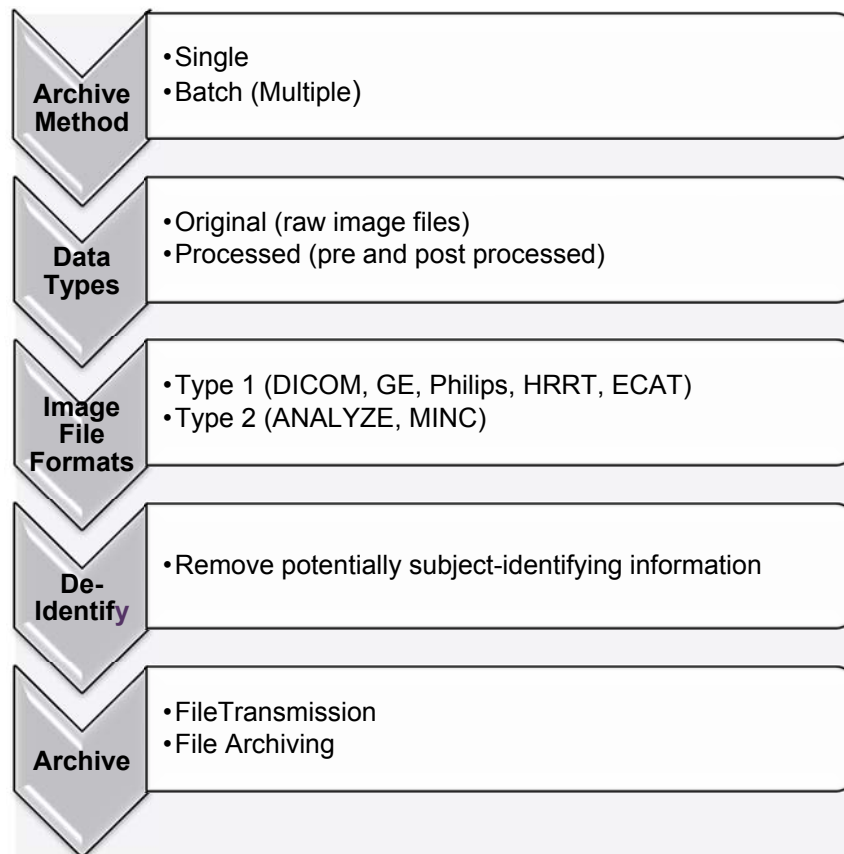
# LONI Image & Data Archive

## D – ARCHIVE

There are two steps in the archive process: de-identification and file transmission. The de-identification step removes or replaces potentially identifying subject information from the image headers.

During the file transmission step, the de-identified files are securely transmitted to LONI and stored in the data archive. The data archive accepts DICOM, GE, Philips, HRRT and ECAT files (Type 1 headers), and files with limited header information, such as Analyze and MINC (Type 2 files). Archiving Type 2 files requires some user input to provide image metadata.

### ARCHIVE PROCESS GRAPHIC OVERVIEW





# LONI Image & Data Archive

## SINGLE ARCHIVE INSTRUCTIONS

Use the Single Archive process to upload one or more files from a single subject.

## TYPE 1 FILES ARCHIVING INSTRUCTIONS (e.g. DICOM, GE, Philips, HRRT, ECAT)

### PREREQUISITES

- Place all image files for each subject within a single directory (**source directory**), which may contain subdirectories. The source directory must not contain multiple image formats.
- Create an empty directory where the de-identified files will be written (**target directory**).

### NOTE

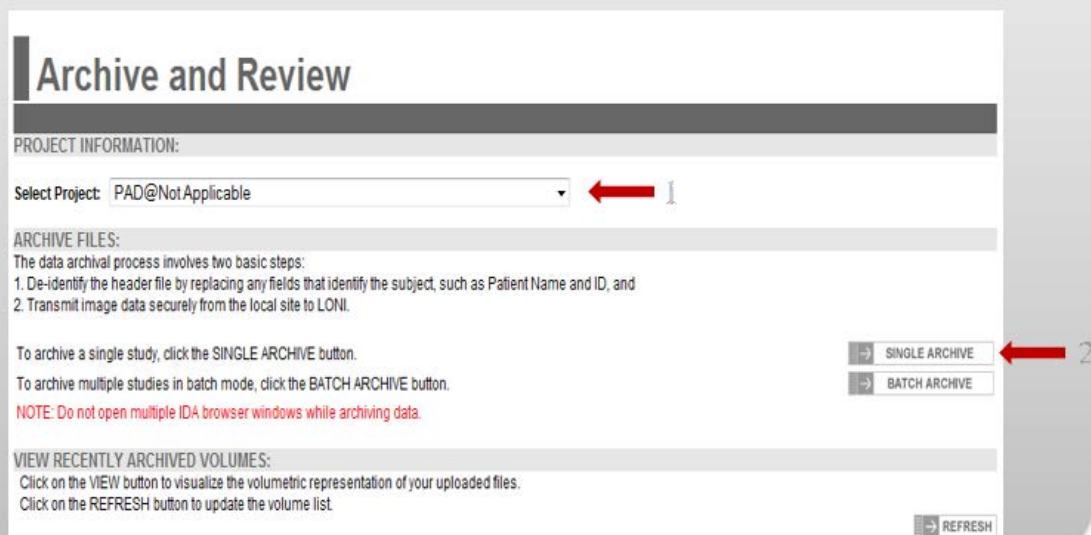
The browser window must remain open during the entire upload process. Closing the browser window cancels the upload. You may minimize the window.

## HOW TO ARCHIVE TYPE 1 FILES (E.G. DICOM, GE, PHILIPS, HRRT, ECAT):

Choose **ARCHIVE FILES** from the Archive menu.



- Select your Project/Site from the drop down menu (1).
- Click **SINGLE ARCHIVE** (2).





## LONI Image & Data Archive

On the **DE-IDENTIFY** page:

- Provide a **Subject ID**.
- Click **Source Directory - Browse** to find the directory which contains the file(s) to be uploaded or provide the directory path then click **Select Source File Directory**.
- Repeat the process to select a target directory to contain the de-identified files.
- To upload files without validating de-identification results, check the Bypass Validation Steps box (not recommended for first time users).
- Click **CONTINUE** to begin the de-identification process.
- To automatically record any issues during the archive process, check the box near **Record diagnostics to file**. You will be prompted to provide a location to store the diagnostics file. **Note:** this is an optional step.

Please follow the instructions outlined above:

Project PAD@NA ☐ Bypass validation steps


Select Data Type ☒ Original ☐ XML

Subject ID:  Max. 10 characters allowed  
Identifier to replace: Patient ID

Source Directory:    
Location of original files

Target Directory:    
Location for target files

NOTE: Source Directory for file formats with complete headers (DICOM, GE, ECAT, etc) may contain multiple series from a single subject. Source Directory for file formats with limited headers (ANALYZE, MINC) or no headers (TIFF, TGA, etc) must contain a single series for a single subject in a single directory. Headerless files must contain a sequential slice number within the file name. ANALYZE files are assumed to be in SPM orientation.



☐ Record diagnostics to file

When the de-identification step is complete, a list of de-identified files is shown along with the de-identified header information.



## LONI Image & Data Archive

- To remove any images, uncheck the **Selected** box beside the image (1).  
**Note:** This feature is not an option with Batch Archival (page 24)).
- Click **SUBMIT** to transmit the de-identified images (2).
- Choosing **DISCARD** cancels the upload and returns to the previous page (3).

**Verify & Submit Data**

**2** STEP TWO: VERIFY & SUBMIT DATA  
THE VERIFY PROCESS LETS YOU CONFIRM THE ACCURACY OF THE DE-IDENTIFIED INFORMATION AND Deselect DATA SETS BEFORE YOU SUBMIT THEM TO THE LONI ARCHIVE FOR STORAGE.

- Review the de-identified metadata below. If you need to make corrections, please use the Back button in your browser window to return to the previous page.
- Review the listed data sets in the box below. Uncheck the box beside any data set which you don't want submitted (such as a localizer or scout).
- Click the SUBMIT button to start the data transmission process.

**DE-IDENTIFIED FILES:**

Subject ID	Sequence Name	Number of Images	Selected
PAD_0005	Circle Scout	1	<input type="checkbox"/>
PAD_0005	Circle Scout	1	<input type="checkbox"/>
PAD_0005	Circle Scout	1	<input type="checkbox"/>
PAD_0005	AuditoryNaming	87	<input checked="" type="checkbox"/>
PAD_0005	Handimitation	87	<input checked="" type="checkbox"/>
PAD_0005	VerbGeneration	87	<input checked="" type="checkbox"/>
PAD_0005	ExternalOrder	87	<input checked="" type="checkbox"/>
PAD_0005	Oculomotor	87	<input checked="" type="checkbox"/>
PAD_0005	Matched Bandwidth Hi...	54	<input checked="" type="checkbox"/>

3 **DISCARD** **SUBMIT** 2 ☒ Compress files before transmitting

**REVIEW DE-IDENTIFIED HEADER INFORMATION:**  
LONI De-Identified File Attributes

The progress bar shows the status of the file transmission step.

- Once the file transmission is complete, click **REVIEW UPLOADED FILES** to view the results of the archiving process.
- Or click **ARCHIVE MORE** to upload more files.

**TRANSMISSION RESULTS**

Progress:  Your Connection Speed:

Modem DSL T1 LAN

71.dcm ...  
Uploading file 257/805 PAD\_PAD\_0005\_MR\_VerbGeneration\_br\_raw\_20110705121124505\_  
70.dcm ...  
Uploading file 258/805 PAD\_PAD\_0005\_MR\_VerbGeneration\_br\_raw\_20110705121124926\_  
76.dcm ...

**REVIEW UPLOADED FILES** **ARCHIVE MORE** **CANCEL**

### TYPE 2 FILES ARCHIVING INSTRUCTIONS (Analyze, MINC)

Available to users with higher access levels.

REFER TO THE [APPENDIX](#) FOR INFORMATION ABOUT HOW TO ARCHIVE ANALYZE AND MINC FILES.  
PLEASE CONTACT [DBA@LONI.USC.EDU](mailto:DBA@LONI.USC.EDU) FOR OTHER FILE FORMATS.





# LONI Image & Data Archive

## BATCH ARCHIVE INSTRUCTIONS

The Batch Archive process is similar to Single Archive, except that multiple subjects and image series can be submitted in a batch. Batches can be of the same or different file formats and modalities. However, users cannot review the results of the de-identification process prior to the batch upload.

Click **BATCH ARCHIVE** on the Archive and Review page.

PAD @LONI PROJECTS SEARCH ARCHIVE DOWNLOAD MANAGE

Archive Files

### Archive and Review

PROJECT INFORMATION:

Select Project: PAD@Not Applicable

ARCHIVE FILES:

The data archival process involves two basic steps:

1. De-identify the header file by replacing any fields that identify the subject, such as Patient Name and ID, and
2. Transmit image data securely from the local site to LONI.

To archive a single study, click the SINGLE ARCHIVE button.

To archive multiple studies in batch mode, click the BATCH ARCHIVE button.

NOTE: Do not open multiple IDA browser windows while archiving data.

VIEW RECENTLY ARCHIVED VOLUMES:

Click on the VIEW button to visualize the volumetric representation of your uploaded files.

Click on the REFRESH button to update the volume list.

SUBJECT ID	SERIES DESCRIPTION	NO OF IMAGES	DATE	View	Download
PAD_0005	gre_field_map	54	Tue, 07/05/2011	VIEW	DOWNLOAD
PAD_0005	gre_field_map	54	Tue, 07/05/2011	VIEW	DOWNLOAD

Follow the instructions on the Single Archive section.

- On the Batch Queue page, click **ADD MORE** (1) to add more studies. Repeat this process for each study series or subject to be archived.
- Click **SUBMIT**(2) to de-identify and upload all files.

### Image Database Batch Queue

REVIEW BATCH QUEUE

THE IMAGE STUDIES LISTED BELOW HAVE BEEN PREPARED FOR BATCH DE-IDENTIFICATION AND UPLOAD.

- Click "ADD MORE" to add another study to the queue or "SUBMIT" to archive this batch now.
- REMEMBER to leave your browser window open until all uploads are complete and you have been returned to this page or the Archive & Review page.
- Click "CLEAR" to clear the batch queue. All logs will be deleted.

Subject	Data Type	Research Group	Source	Status	Date	Remove
PAD_0006	Original	Control	D:/ivantiest_data/UCLA/D1017/SO...	Queued	7/12/11	remove
PAD_0007	Original	Control	D:/ivantiest_data/UCLA/D1017/SO...	Queued	7/12/11	remove

CLEAR ADD MORE SUBMIT

## DETAILS:

- Once files are archived, click **Review Uploaded Files** to view a list of all the successfully archived images. Or click **Archive More** to upload more files.



# LONI Image & Data Archive

## PROCESSED IMAGE ARCHIVE INSTRUCTIONS

Archiving processed images requires the inclusion of an XML file that describes the processing provenance and the link to the image(s) from which it is derived. This method is best suited to large batch archival. Please contact [dba@loni.usc.edu](mailto:dba@loni.usc.edu) for more information about using XML files.

## E - DOWNLOAD

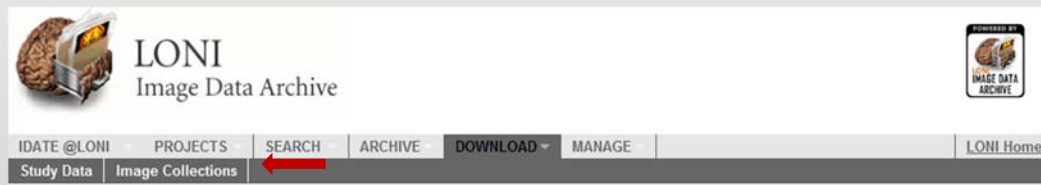
The **DOWNLOAD** menu allows users to manage and download image collections, and download study data.

### STEPS TO DOWNLOAD IMAGING DATA

- Perform a Simple or Advanced search.
- Form an image collection.
- Download.

There are two ways to access and manage existing Collections in the IDA:

- Select **IMAGE COLLECTIONS** on the Download menu.



- Or click **DATA COLLECTIONS** on the Simple or Advanced Query menu

Search | Data Collections

Enter your selection criteria using the form below:

SUBJECT INFORMATION		IMAGE INFORMATION	
Subject ID:	<input type="text"/>	Modality:	MRI
Sex:	Both	Series Description:	<input type="text"/>
Age:	Equals <input type="text"/> years	Weighting:	<input type="text"/>
		Slice Thickness:	Equals <input type="text"/> mm
		Acquisition Plane:	<input type="text"/>

SEARCH RESULTS

Order By:  and then by: ☒

Image Count: 500

RESET SEARCH

Note: Refer to the Create collections section (page 14) for information on how to create and manage collections before downloading imaging data.





# LONI Image & Data Archive

## DOWNLOAD STUDY DATA

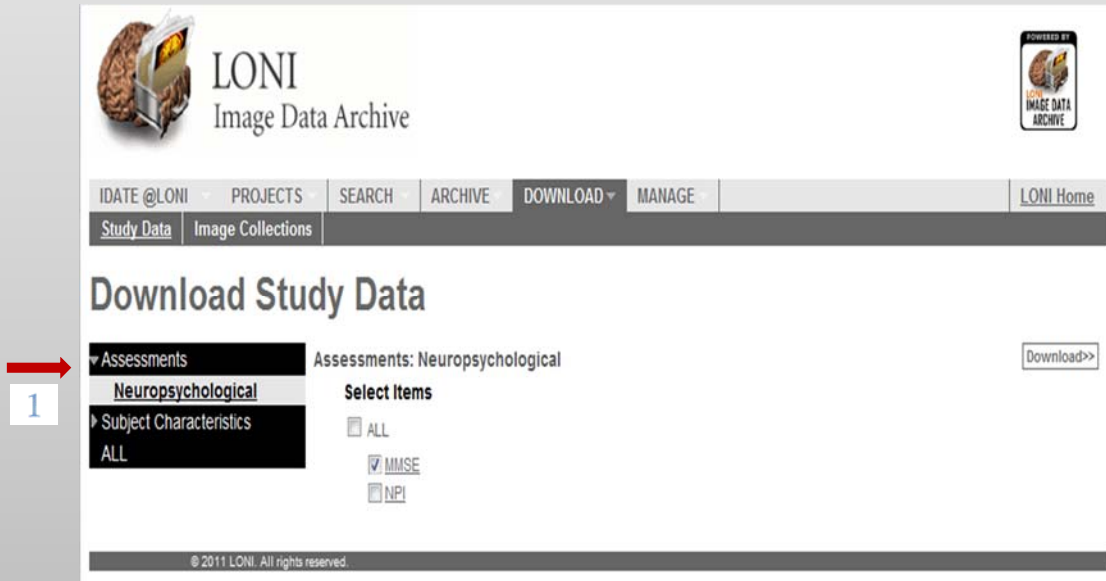
Clinical and research data are available for downloading on selected projects.

Select **DOWNLOAD** then **STUDY DATA** from the menu.



The **Download Study Data** page displays a list with available categories to the left.

- Click on a category to display a list of csv files available for downloading. In the example below, the category **ASSESSMENTS** (1) was selected.
- Click on the checkbox beside the item(s). In the example below, the item **MMSE** (2) was selected.
- Click **DOWNLOAD** (3).
- When the pop-up window appears, choose to open or save the file.



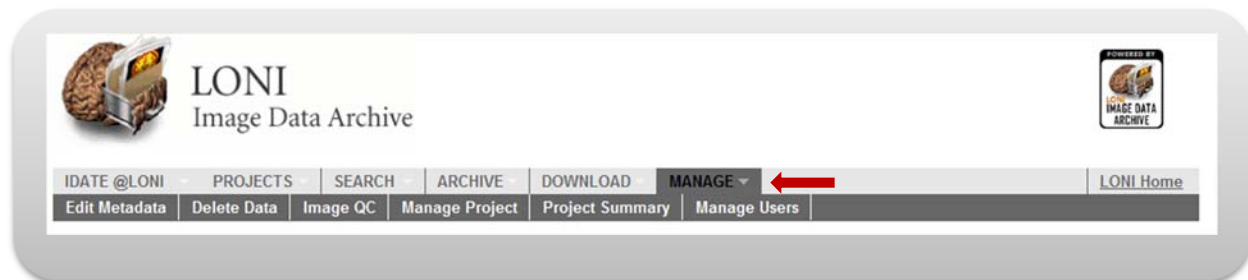


# LONI Image & Data Archive

## F – MANAGE

The **MANAGE** menu allows project leaders and users with higher access levels to manage projects, edit metadata, delete data, perform image quality control, view project summaries and manage other users.

**Note:** not all options are available to all projects/users.



### EDIT METADATA

The **Edit Metadata** submenu allows authorized users to add or modify subject-related information such as sex, age and weight.

- Click **Edit Metadata** on the Manage menu.
- Search for a specific subject in a particular site by providing Subject ID and Site Name then click **SEARCH**.

Enter the Subject ID to search for a specific subject or select a Site Name to search for all subjects in that site.  
You may also use both the Subject ID and the site name to search for a specific subject in a particular site.

SUBJECT INFORMATION	
Subject ID:	<input type="text"/>
You may use the wild card character in the Subject ID. For example, enter UCLA% to search for all Subject IDs beginning with UCLA.	
Site Name:	<input type="text" value="Select"/>
<input type="button" value="RESET"/>	
<input type="button" value="SEARCH"/>	

Click **UPDATE** beside the subject to be edited.

Your search returned 5 record(s).  
Press the **UPDATE** button beside the entry you wish to update OR press the **NEW SEARCH** button to return to the search page.

Subject ID	Sex	Study Date	Age	Subject Weight	Select
UCLA_1231	Male	09/05/2006	63.0	77.18	<input type="button" value="UPDATE"/>
		09/05/2006	63.0	77.18	<input type="button" value="UPDATE"/>
		09/05/2006	63.0	74.91	<input type="button" value="UPDATE"/>
		09/05/2006	63.0	74.91	<input type="button" value="UPDATE"/>
		09/05/2006	63.0	74.91	<input type="button" value="UPDATE"/>

1

Previous



# LONI Image & Data Archive

Change the desired information then click **UPDATE**.

SUBJECT INFORMATION		STUDY INFORMATION	
Subject ID:	<input type="text" value="UCLA_1231"/>	Study Date:	<input type="text" value="09/05/2006"/>
Sex:	<input type="text" value="Male"/>	Age:	<input type="text" value="63.0"/> Years
		Weight:	<input type="text" value="77.18"/> Kg
PROJECT SPECIFIC INFORMATION			
Handedness:	<input type="text" value="R"/>	<small>Alphanumeric character</small>	
Project Phase:	<input type="text" value="2"/>	<small>Unknown type</small>	
<input type="button" value="NEW SEARCH"/>		<input type="button" value="UPDATE"/>	

## Notes:

- Items grayed out cannot be changed.
- Project specific Information may need to be entered for each new subject.

The Updated Results page displays the edited record information.

Below is your updated result.  
Click the **NEW SEARCH** button to return to the search page and search for more subjects.  
Click the **BROWSE** button to return to the results page.

Subject ID	UCLA_1856
Sex	Male
Study Date	11/06/2008
Age	39.0
Subject Weight	84.44
Handedness	R
Project Phase	2

## DELETE DATA

Use the **Delete** submenu to permanently remove an image, study, series or subject from the archive. There is a delay time of approximately seven days from when the user deletes an image until it is permanently removed from the archive. **Note:** only users with higher access levels are permitted to delete data.

Click **DELETE DATA** on the MANAGE menu.

The screenshot shows the LONI Image Data Archive header with the LONI logo and a 'POWERED BY' logo. Below the header is a navigation bar with the following items: IDATE @LONI, PROJECTS, SEARCH, ARCHIVE, DOWNLOAD, MANAGE (with a dropdown arrow), and LONI Home. A secondary bar contains links: Edit Metadata, Delete Data (highlighted with a red arrow), Image QC, Manage Project, Project Summary, and Manage Users.



# LONI Image & Data Archive

Provide a subject ID, a study date and/or series description on the Search tab and click **SEARCH**.

Enter your selection criteria using the form below:

SUBJECT INFORMATION	
You may use the wild card character in the Subject ID & Series Description. For example, enter UCLA* to search for all Subject IDs beginning with UCLA.	
Subject ID: <input type="text" value="UCLA_0001"/>	Study Date: <input type="text" value="Equals"/> <input type="text"/>
Image Type: <input checked="" type="checkbox"/> Original <input checked="" type="checkbox"/> Processed <input checked="" type="checkbox"/> Post-processed	Series Description: <input type="text"/>
<input type="button" value="RESET"/>	<input type="button" value="SEARCH"/>

- To delete an individual image, check the checkbox beside **SERIES DESCRIPTION** (1) column.
- Alternatively, check the **STUDY** (2) box to delete all images within a study.
- **PROCEED TO DELETE 1 IMAGE** (3).

(1 of 1) < prev 1 next >

Proceed to delete 1 image

Subject	Research Group	Sex	Scan Date	Visit	Age	Study	Modality	Image Type	Series Description	Series
UCLA_0001	Control	F	8/04/1997		21	<input type="checkbox"/>	MRI	Original	Head,Sag,2D,Spin Echo,EDR,GR	<input checked="" type="checkbox"/>
								Original	Long TE FSE 1	<input type="checkbox"/>
								Original	Long TE FSE 2	<input type="checkbox"/>
								Original	Short TE FSE 2	<input type="checkbox"/>

- Provide a reason on the **REASON FOR DELETION** box (1).
- Click **COPY TO ALL** (2) if the reason for deletion is the same for all files .
- Click **DELETE IMAGES** (3)

The images listed below have been selected for deletion.  
You must supply a reason for each selection you delete.

Select	Subject	Research Group	Sex	Scan Date	Visit	Age	Modality	Image Type	Series Description	Reason For Deletion
<input checked="" type="checkbox"/>	UCLA_0001	Control	F	8/04/1997		21	MRI	Original	Head,Sag,2D,Spin Echo,EDR,GR	Type reason here

- To remove the image from the delete list, click **REMOVE SELECTION** (4).



## LONI Image & Data Archive

- Click **PRINT OUT THE RECEIPT** to print a copy of the deletion list for your records.

Search Receipt

Deleted by jessica.yaros@loni.ucla.edu [ Jun 17, 2013 02:12:21 PM(GMT-0700) ]  
The images below have been removed from the LONI Image Data Archive.  
Please print this page for your records.

Close Print out the receipt

Subject	Research Group	Sex	Scan Date	Visit	Age	Modality	Image Type	Series Description	Reason for deletion
UCLA_0001	Control	F	8/04/1997		21	MRI	Original	Long TE FSE 2	fbvctxfv

### PROJECT SUMMARY

The **Project Summary** submenu is a multi-layered environment which allows authorized users to view the project upload and download summary information. Summaries can be exported as CSV files into Excel spreadsheets.

Project Management Summary requires Flash player to display charts. Tables in Project Management Summary are viewable without a Flash player.

Select a project from the Project menu, click Manage then **PROJECT SUMMARY**. There are three sub-sections: **Upload Summary**, **Download Summary**, and **Upload Listings**.

 **LONI**  
Image Data Archive



IDATE @LONI PROJECTS SEARCH ARCHIVE DOWNLOAD **MANAGE** LONI Home

Edit Metadata Delete Data Image QC Manage Project Project Summary Manage Users

Use the **UPLOAD LISTINGS** (shown below) or **DOWNLOAD SUMMARY** tabs to view statistics on archived files, or downloaded data, respectively.

- Specify a date range (1) and click **Refresh** (2).
- To download this data, select **Export CSV** (3).

Upload Summary Download Summary **Upload Listings**

From: June 2013 To: July 2013 1

2 Refresh Export CSV 3

(1 of 1) < prev 1 next >

Received	Site	Subject	Field Strength	Weighting	Series Description
6/1/2013	UCLA	UCLA_8888	1.5	T1	T1-3D-FLASH - 20 Flip
6/1/2013	UCLA	UCLA_9999	1.5	T1	T1-3D-FLASH - 20 Flip
6/1/2013	UCLA	UCLA_2223	1.5	T1	T1-3D-FLASH - 20 Flip
6/1/2013	UCLA	UCLA_2222	1.5	T1	T1-3D-FLASH - 20 Flip
6/1/2013	UCLA	UCLA_1111	1.5	T1	T1-3D-FLASH - 20 Flip
6/1/2013	UCLA	UCLA_2345	1.5	T1	T1-3D-FLASH - 20 Flip
6/1/2013	UCLA	UCLA_1234	1.5	T1	T1-3D-FLASH - 20 Flip



## LONI Image & Data Archive

Click the **UPLOAD SUMMARY** tab to view a breakdown of images by Modality (MRI, PET, DTI, etc.), Image Type (original or processed), or Image Status (available, User Quarantine, Failed QC).

- Select the checkboxes above the pie charts to view individual or combined breakdowns. At least one category must be selected. For example, the interface below displays the quantity of differing image modality types collected over time.



### MANAGE USERS

The **Manage Users** submenu allows project leaders to manage permissions for team members and associated collaborators.

Users must register for an account before they can be granted access to a project. Refer User Registration (page 5) for information on how to create an account.





## LONI Image & Data Archive

### Grant New User Access

- Select a project from the **PROJECTS** menu.
- Click **MANAGE USERS** on the Manage menu.
- Enter the user's email in the text box(1)
- Click **FIND** (2)

User access is determined by the combination of site and access level. Modify an existing user's access level by clicking on the edit button, or to add a new user access, enter the user's email address in the New User Access section below.

**NEW USER ACCESS**

Enter user's email:  **FIND**

**MODIFY USER ACCESS**

User	User Email	Site	Access Level	Last Login	Action
------	------------	------	--------------	------------	--------

- Choose a site in the **DEFINE USER ACCESS** section (1).
- Select the user access level (2):
  - Manager: permission to search, view, download and archive data; edit metadata; delete images and manage user access.
  - Leader: permission to search, view, download, and archive data; as well as edit metadata.
  - Member: permission to search, view, download and archive data.
  - Guest: permission to search, view and download data.
- Click **UPDATE** (3).

Select the new user's site and access level from the drop-down lists and click Update, or click Cancel to return to the previous page.

**DEFINE USER ACCESS**

User	User Email	Site	Access Level
User	user@loni.ucla.edu	Project-Wide	DBA

**CANCEL** **UPDATE**

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- To repeat the process for another project, choose a different project from **SELECT NEW PROJECT**.

### Change Existing User Access

- Click the **MANAGE USERS** submenu from the **MANAGE** menu.
- Click either **EDIT** or **REMOVE** beside the user whose access level is to be modified.
- Select **SITE** and/or **ACCESS LEVEL** from the drop down boxes.
- Click **UPDATE**.



## G - GLOSSARY

**Advanced Search:**

Advanced Search allows users to search with a combination of subject, study, and image descriptors. Users can search several modalities simultaneously and save search results.

**Archiving:**

The storage of image data and metadata descriptors for future retrieval.

**Batch archive:**

Uploading data from multiple subjects simultaneously. Batches may be of different file formats and modalities.

**Collections:**

An image or group of images selected from the results of a Simple or Advanced Search and given a meaningful description (collection name).

**Delete:**

Removing image files from the archive.

**De-identification:**

Removal or replacement of certain image header contents to protect the identity of the subject.

**DICOM:**

Digital Imaging and Communication in Medicine.

**DTI:**

Diffusion Tensor Imaging.

**Edit Metadata:**

Modifying information such as sex, age, and weight, as well as other project-specific attributes.

**Files with TYPE 1/comprehensive headers:**

File formats: DICOM, GE, Philips, HRRT and ECAT.

**Files with TYPE 2/ limited headers:**

File formats: Analyze, MINC.

**FMRI:**

Functional Magnetic Resonance Imaging.

**Image metadata:**

Information contained in the image header describing the subject and image.

**MINC:**

Medical Imaging NetCFD

**MRA:**

Magnetic Resonance Angiography.

**MRI**

Magnetic Resonance Imaging.





## LONI Image & Data Archive

**NIFTI:**

Neuroimaging Informatics Technology Initiative.

**Original data:**

Raw image files not pre- or post-processed.

**PET:**

Positron Emission Tomography.

**Processed data:**

Image data files transformed or modified from their original form, i.e., registered, warped or corrected data.

**Series description:**

An identifier (name) given to a data set.

**Sequence name:**

Same as series description.

**Simple Search:**

Searches based on a limited set of criteria such as subject ID, research group, sex, age, weight, modality, series description.

**Single archive:**

Upload of data for one subject at a time. File headers must be of the same type for upload (all TYPE 1 or TYPE 2).

**Source directory:**

Directory or folder containing files to be de-identified. Contains single format, single subject image files only.

**Study:**

One or more files from the same subject acquired on the same visit and scanner.

**Target directory:**

The Target Directory can be an existing folder or a new directory. A temporary location to contain de-identified files, information and a copy of the logs of the upload process.

**Validation:**

The process of verifying results of de-identification, and removing images which are not to be uploaded. The validation button appears only with the Single Archive process.

**XML:**

Extensible Markup Language. A language framework created in 1996 by the W3C to allow structured information to be shared and stored on the internet in an easily readable text format.



## H - APPENDIX

### XML FILES

When an image file is downloaded, an XML file containing metadata describing the subject and other information is placed in the root of the download directory. For processed data, the file also includes processing provenance. The contents of the XML file vary depending on project.

XML file example:

```
<?xml version="1.0" encoding="UTF-8" ?>
-<idaxs xmlns="http://loni.usc.edu/ida/idxs/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="/XSDS/IDAXS_2_0.XSD">
- <project xmlns="">
<projectIdentifier>JCBM</projectIdentifier>
<projectDescription>International Consortium for Brain Mapping</projectDescription>
<siteKey>004</siteKey>
- <subject>
<subjectIdentifier>USC_0004</subjectIdentifier>
<researchGroup>Control</researchGroup>
<subjectSex>F</subjectSex>
<subjectInfo item="DX GROUP">Normal</subjectInfo>
- <visit>
<visitIdentifier>Month 6</visitIdentifier>
- <assessment name="MMSE">
- <component name="MMSE TOTAL SCORE">
<assessmentScore attribute="MMSCORE">24.00</assessmentScore>
</component>
</assessment>
- <assessment name="CDR">
- <component name="CDR TOTAL SCORE">
<assessmentScore attribute="CDGLOBAL">0.50</assessmentScore>
</component>
</assessment>
- <assessment name="NEUROPSYCHIATRIC INVENTORY-QUESTIONNAIRE (NPI-Q)">
- <component name="NEUROPSYCHIATRIC INVENTORY Q - TOTAL SCORE">
<assessmentScore attribute="NPIScore">2.00</assessmentScore>
</component>
</assessment>
- <assessment name="FUNCTIONAL ASSESSMENT QUESTIONNAIRE">
- <component name="FAQ TOTAL SCORE">
<assessmentScore attribute="FAQTOTAL">2.00</assessmentScore>
</component>
</assessment>
</visit>
- <study>
<studyIdentifier>9876</studyIdentifier>
<subjectAge>69.9800</subjectAge>
<ageQualifier>Y</ageQualifier>
<weightKg>84.6000</weightKg>
<postMortem>F</postMortem>
- <series>
<seriesIdentifier>7654</seriesIdentifier>
<modality>MRI</modality>
- <imagingProtocol>
<imageUID>32109</imageUID>
```



## LONI Image & Data Archive

```
<description>MP-RAGE</description>
- <protocolTerm>
<protocol term="ACQUISITION TYPE">3D</protocol>
<protocol term="WEIGHTING">T1</protocol>
<protocol term="PULSE SEQUENCE">RM</protocol>
<protocol term="SLICE THICKNESS">1.20000</protocol>
<protocol term="TE">3.92400</protocol>
<protocol term="TR">8.91600</protocol>
<protocol term="TI">1000.00000</protocol>
<protocol term="COIL">8HRBRAIN</protocol>
<protocol term="FLIP ANGLE">8.00000</protocol>
<protocol term="ACQUISITION PLANE">SAGITTAL</protocol>
<protocol term="MATRIX X">256.00000</protocol>
<protocol term="MATRIX Y">256.00000</protocol>
<protocol term="MATRIX Z">166.00000</protocol>
<protocol term="PIXEL SPACING X">0.93750</protocol>
<protocol term="PIXEL SPACING Y">0.93750</protocol>
<protocol term="MANUFACTURER">GE MEDICAL SYSTEMS</protocol>
<protocol term="MFG MODEL">SIGNA EXCITE</protocol>
<protocol term="FIELD STRENGTH">1.50000</protocol>
</protocolTerm>
- <imageRating>
<ratingDescription>1</ratingDescription>
<value>1</value>
</imageRating> </imagingProtocol>
</series>
</study>
</subject>
</project>
</idaxs>
```



## LONI Image & Data Archive

TYPE 2 FILES ARCHIVING INSTRUCTIONS (Analyze, MINC).  
Please contact [DBA@LONI.USC.EDU](mailto:DBA@LONI.USC.EDU) for other file formats.

- On the Archive and Review tab, choose **SINGLE** archive.

PAD @LONI PROJECTS SEARCH **ARCHIVE** DOWNLOAD MANAGE

Archive Files

### Archive and Review

PROJECT INFORMATION:

Select Project: PAD@Not Applicable

ARCHIVE FILES:

The data archival process involves two basic steps:

1. De-identify the header file by replacing any fields that identify the subject, such as Patient Name and ID, and
2. Transmit image data securely from the local site to LONI.

To archive a single study, click the SINGLE ARCHIVE button.

To archive multiple studies in batch mode, click the BATCH ARCHIVE button.

**NOTE:** Do not open multiple IDA browser windows while archiving data.

VIEW RECENTLY ARCHIVED VOLUMES:

Click on the VIEW button to visualize the volumetric representation of your uploaded files.

Click on the REFRESH button to update the volume list.

REFRESH

SUBJECT ID	SERIES DESCRIPTION	NO. OF IMAGES	DATE	View	Download
PAD_0005	gre_field_map	54	Tue, 07/05/2011	VIEW	DOWNLOAD
PAD_0005	gre_field_map	54	Tue, 07/05/2011	VIEW	DOWNLOAD

- Provide subject identification, select Source and Target Directories.

Select a modality from the drop-down list.

### Define Study

**1A**

STEP 1A: DEFINE STUDY

THE DEFINE STUDY PROCESS LETS YOU ADD DATA TO AN EXISTING STUDY OR DESCRIBE A NEW STUDY.

- Select imaging modality from the drop down menu.
- Select an existing study or
- Add a new study by describing new study attributes and clicking the SUBMIT DATA Button.

SELECT MODALITY:

Modality

CANCEL

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# LONI Image & Data Archive

Provide the study information and click **SUBMIT DATA**.

**DEFINE A NEW STUDY:**

Study Date	2011-07-12	YYYY-MM-DD
Subject Age	22	Years
Subject Weight	120	kg
Post Mortem	No	

- Provide the Image Metadata information.
- To save the information provided for reusing at a later date, click **SAVE PROTOCOL**(1)
- Click **SUBMIT DATA** (2).

**REQUIRED INFORMATION:**

Sequence Name: MPRAGE

Weighting	Select Value	Select Other to type in.
Slice Thickness mm	Select Value	Select Other to type in.
Acquisition Plane	Select Value	
Matrix X pixels	Select Value	Select Other to type in.
Matrix Y pixels	Select Value	Select Other to type in.
Matrix Z	Select Value	Select Other to type in.
Pixel Spacing X mm	Select Value	Select Other to type in.
Pixel Spacing Y mm	Select Value	Select Other to type in.
Manufacturer	Select Value	Select Other to type in.
Mfg Model	Select Value	Select Other to type in.
Field Strength tesla	Select Value	Select Other to type in.

**MR ACQUISITION:**

Acquisition Type	Select Value	
Pulse Sequence	Select Value	Select Other to type in.
TE ms	Select Value	Select Other to type in.
TR ms	Select Value	Select Other to type in.
T1 ms	Select Value	Select Other to type in.
Coil	Select Value	Select Other to type in.
Interslice Spacing mm	Select Value	Select Other to type in.
Flip Angle degree	Select Value	Select Other to type in.



# LONI Image & Data Archive

On the Verify & Submit Data screen, click **SUBMIT** to archive the de-identified images or **DISCARD** to cancel the upload and return to the previous page.

## Verify & Submit Data

2

**STEP TWO: VERIFY & SUBMIT DATA**

THE VERIFY PROCESS LETS YOU CONFIRM THE ACCURACY OF THE DE-IDENTIFIED INFORMATION AND DESELECT DATA SETS BEFORE YOU SUBMIT THEM TO THE LONI ARCHIVE FOR STORAGE.

- Review the de-identified metadata below. If you need to make corrections, please use the Back button in your browser window to return to the previous page.
- Review the listed data sets in the box below. Uncheck the box beside any data set which you don't want submitted (such as a localizer or scout).
- Click the SUBMIT button to start the data transmission process.

**DE-IDENTIFIED FILES:**

Subject ID	Sequence Name	Number of Images	Selected
PAD_0006	MPRAGE	1	<input checked="" type="checkbox"/>

Compress files before transmitting

**REVIEW DE-IDENTIFIED HEADER INFORMATION:**

LONI De-Identified File Attributes

Series Description: MPRAGE

Series ID: 1310511129165

D:\ivani\test\_data\New Folder\1310511129165\PAD\_PAD\_0006\_MRI\_MPRAGE\_br\_raw\_20

## DETAILS:

- If the subject has other studies already archived, a list of previously archived images and their dates appears. Click Select for the desired study.
- Study information must be provided only if an existing study is not selected.
- For Analyze and MINC, source files can be in a shared directory.
- Image protocol information must be provided for each image series.
- For 3-D images: if archiving multiple files in the same source directory, use batch archive and select specific image files rather than subdirectories.