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# OAI Online and Access to Data, Images, and Biospecimens

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# OAI data is publicly available

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- Accessible via the OAI Online website
  - [www.oai.ucsf.edu](http://www.oai.ucsf.edu)
- Developed by data team at OAI Coordinating Center, UCSF
- OAI data and documentation available to anyone
  - Register
  - Agree to terms of data use agreements



# OAI data users (as of 10-24-08)

- Registered OAI Online users 1,063
  - US 747
  - International 316
- Number of countries 51  
(from **A**rgentina to New **Z**ealand)
- Datasets downloaded 2,380
- Image sets distributed 126



# Public data releases

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- Data released in 2 groups:
  - 1<sup>st</sup> group = 1<sup>st</sup> half (56% enrolled, n=2,686)
  - 2<sup>nd</sup> group = Entire cohort (n=4,796)
- Regular release schedule
  - Two releases per visit cycle
- Concurrent release of images and clinical data



# Data currently available

- Baseline \* (1st group; n=2,686)
- 12-month (1st group; n=2,686)
- 18-month (subset of progression cohort; n=287)
  - plus corresponding baseline and 12-month MRI images for this subset
- 24-month (1st group; n=2,686)
- Paired X-ray readings (JSW) for 160 longitudinal image set

\* Clinical data for entire cohort available; however, images available for 1st group only.



# Upcoming data releases

- November 2008
  - Baseline images (entire cohort)
  - 12-month questionnaire, exams, images (entire cohort)
- Winter 2008/2009
  - Data from ongoing centralized image assessments
- Spring 2009
  - 30-month questionnaire, MRI s (subset of progression cohort)
  - 24-month questionnaire, exams, images (2nd group) \*
- Summer/Fall 2009
  - 36-month questionnaire, exams, images \* (1st group)

\* Release schedule may be modified.



# Access to OAI data

- Register OAI Online ([www.oai.ucsf.edu](http://www.oai.ucsf.edu))
- Agree to terms in Data Use Agreement
- Download questionnaire, exam data and documentation
- For images:
  - Fax 'Image Use Agreement' and request form to UCSF
  - Smaller releases (<250 GB):  
UCSF sends images on OAI 'lego'-drive; user returns drive
  - Larger releases:  
User provides 2-TB hard-drive; UCSF returns it with images



# Create an account

- Required to access 'Data and Documentation'
- Contact information
  - Notified of new releases, features, errata, etc.



>> My Account >> Logon

## Logon

Username:

Password:

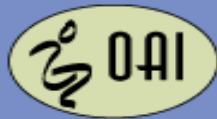
## Logon Help

- If you are a new user, please [Create My Account](#) first. The process only takes a few minutes. You need an account to be able to access the *Data & Documentation* section of the website.
- If you intend to download data or analyze data with the [Data Explorer](#), you have to read and accept the terms of the [Data Use Agreement](#) (you must be logged on to view it).
- Remember that passwords are *cAse-seNsitive*.





# OAI Online home page



Osteoarthritis Initiative a knee health study

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>> Home

## The Osteoarthritis Initiative

*a multi-center, four-year observational study of men and women*

The OAI is a nationwide research study, sponsored by the [National Institutes of Health](#) (part of the Department of Health & Human Services), that will help us better understand how to prevent and treat *knee osteoarthritis*, one of the most common causes of disability in adults.

OAIOnline is the name for this website, which provides access to [the Osteoarthritis Initiative](#) (OAI) study documentation and data.

### Data News

**1-2-3 Data.** [Three quick steps](#) to download the clinical data.

*What's available as of 4/15/2008*

[Clinical](#) (download data from OAIOnline)

- Baseline questionnaire and exam data for entire cohort (4,796 participants)
- Baseline biomarkers dataset (includes baseline results from paired baseline/12-month x-ray readings on a sample of 160 progression cohort participants)
- 12-month follow-up questionnaire and exam data for first half of cohort (2,686 participants)

### Create an account now!

You must have an account and accept the terms of a Data Use Agreement before you can download or explore clinical data. Please go to [My Account](#) and create a new account now.

### New Features in [Data & Documentation](#)

**Tutorial:** Where do I begin? Try the clinical data [tutorial](#) which walks you through the variety of tools available on OAIOnline for touring and understanding the data.

**Search/browse:** [Search/browse](#) a database of categorized variable documentation displayed longitudinally with links to statistics, comments, and annotated data collection forms.

**My Cart:** Create a [personal cart](#) of variables of interest that can be used 1) to build a [custom codebook](#) able to be read offline, and 2) to filter downloadable datasets.



Osteoarthritis Initiative



# Summary of Data and Images Currently Available

**1-2-3 Data.** [Three quick steps](#) to download the clinical data.

*What's available as of 4/15/2008*

<p><b>Clinical</b> (download data from OAIOnline)</p>	<ul style="list-style-type: none"><li>● Baseline questionnaire and exam data for entire cohort (4,796 participants)</li><li>● Baseline biomarkers dataset (includes baseline results from paired baseline/12-month x-ray readings on a sample of 160 progression cohort participants)</li><li>● 12-month follow-up questionnaire and exam data for first half of cohort (2,686 participants)</li><li>● 12-month biomarkers dataset (includes 12-month results from paired baseline/12-month x-ray readings on a sample of 160 progression cohort participants)</li><li>● 18-month questionnaire data for 288 progression cohort participants</li><li>● 24-month follow-up questionnaire and exam data for first half of cohort (2,686 participants)</li></ul>
<p><b>Imaging</b> (request images from OAI Coordinating Center)</p>	<ul style="list-style-type: none"><li>● Baseline X-ray and MRI images for a sample of 200 progression and incidence cohort participants</li><li>● Baseline and 12-month X-ray and MRI images for a sample of 160</li></ul>






# Where to start



>> About OAI

## About OAI

### The Osteoarthritis Initiative (OAI)

- [Study overview and objectives](#)
- [Study design protocol](#) (0.65 mb)  [Appendices](#) (2.5 mb) 
- [Collaboration worldwide](#)
- [Funding](#)
- [UCSF IRB approval letter for OAI](#) 

### Visit Schedule and Assessments

- [Examination Measures](#)
- [Questionnaire Measures](#)

### OAI Related Links

- [OAI News & Events](#) at the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)
- [National Institute on Aging](#) (NIA)



# How to find data

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- Refer to list of examination and questionnaire measures, by visit



# Visit schedule and measurements

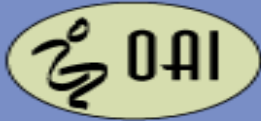
## OAI Protocol

### Osteoarthritis Initiative: A Knee Health Study

Questionnaire Measures and Frequency									
Questionnaire/ Interview Measures	Initial Eligibility	Screening Visit	Enrollment Visit	Follow-up Visit					
				12-mo	18-mo <sup>1</sup>	24 -mo	30-mo <sup>1</sup>	36-mo	48-mo
Contact information	X		X	X		X		X	X
Demographics (such as age, gender, ethnicity, education, marital status, residency, income)	X		X					X	
Employment, current and past			X	X		X		X	X
Health care and health insurance			X	X		X		X	X
MRI contraindications	X	X	X	X	X	X	X	X	X
<b>Knee Symptoms</b>									
- Frequency of knee symptoms & medication use for knee symptoms, past 12 mos, 30 days	X	X		X		X		X	X
- Knee pain 0-10 rating scale, past 7, 30 days		X	X	X	X	X	X	X	X
- WOMAC knee pain and stiffness, past 7 days			X	X	X	X	X	X	X
- KOOS knee pain and symptoms, past 7 days			X	X	X	X	X	X	X
<b>Knee-related function and QOL</b>									
- WOMAC physical function, past 7 days			X	X	X	X	X	X	X
- KOOS sport, recreation, past 7 days			X	X	X	X	X	X	X
- KOOS Quality of life, past 7 days			X	X	X	X	X	X	X
- Participant global assessment of knee impact			X	X	X	X	X	X	X
- Limitation of activity due to knee Sx, past 30 days		X		X		X		X	X



# Tools for data searching



OsteoArthritis Initiative [a knee health study](#)

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[imaging](#)

[search/browse](#)

[forms](#)

[operations manuals](#)

[DataExplorer](#)

[FA](#)

>> [Data & Documentation](#)

## Data & Documentation

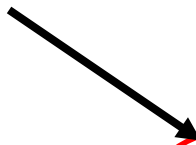
OAI has collected both clinical data from forms (questionnaires and examinations) and images from X-RAY and MRI images of joints.

[FAQ](#) - frequently asked questions

[Summary of Data and Images Currently Available](#)

### Clinical

- [Clinical data](#) - "Getting Started with OAI Data: Overview of Structure, Use, and Conventions", version logic, visit schedule and assessments, variable guides, formats, documentation (includes variable distributions), datasets, and dataset descriptions.
- [Search/browse](#) a database of categorized variable documentation displayed longitudinally with links to statistics, comments, and annotated data collection forms.
- [Data collection forms](#) - annotated pdfs of the questionnaires used for collecting data, including the visit schedule and assessments.
- [Operations manuals](#) - pdfs of the detailed procedures for collecting data and performing examinations.
- Create a [personal cart](#) of variables of interest that can be used 1) to build a [custom codebook](#) able to be read offline, and 2) to filter downloadable datasets.
- [DataExplorer](#) - explore the clinical data online. Generate descriptive statistics: cross tabs, subsetting, frequency distributions and more. This tool requires acceptance of the terms of a Data Use Agreement.
- [Tutorial](#) - walks you through the variety of tools available for touring and comprehending the clinical data. [Variables for Sample Research Question](#).




# Search and browse

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- Powerful tool to become familiar with data
- Search any variable or category
- Longitudinal display
- Access data collection form
- Look at frequencies
- Review notes and SAS code



# Search keyword and/or category



**OsteoArthritis Initiative** a knee health study

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clinical | imaging | **search/browse** | forms | operations manuals | DataExplorer | FAQ | tutorial

>> **Data & Documentation** >> **Search/Browse**

**1** → **Keyword or phrase:**  → **Browse/Limit Category:**   
in variable label, root, or category [Clear Text](#)   
Anthropometry  
Back pain  
Biospecimens collection  
Hold "Ctrl" to select multiple categories.

**2** **Visit:**  **P02** Initial Eligibility Intw  **P01** Screening  **V00** Enrollment  **V01** 12 month Annual

**3**   [tutorial](#)



# Search results

## KEY

Variable Name = Prefix (from Visit column heading) + Root

Sort Order by cat, subcat, visit, order of forms, order on form

### Back pain (▲)

<input type="checkbox"/> Label	Root	P02	P01	V00	V01	V02	V03
<input type="checkbox"/> <a href="#">Any back pain, past 30 days</a>	BP30		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<input type="checkbox"/> • <a href="#">How often bothered by back pain, past 30 days</a>	BP30OFT		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<input type="checkbox"/> • <a href="#">When had back pain how bad was it on average, past 30 days</a>	BPBAD		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<input type="checkbox"/> • <a href="#">Back pain location, upper back</a>	BPUB		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<input type="checkbox"/> • <a href="#">Back pain location, middle back</a>	BPMB		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<input type="checkbox"/> • <a href="#">Back pain location, lower back</a>	BPLB		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<input type="checkbox"/> • <a href="#">Back pain location, buttocks</a>	BPB		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<input type="checkbox"/> • <a href="#">Back pain location, don't know</a>	BPDK		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<input type="checkbox"/> • <a href="#">Limit activities due to back pain, past 30 days (calc)</a>	BPACTCV		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<input type="checkbox"/> ○ <a href="#">Total days in bed and/or limited activity due to back pain, past 30 days (calc)</a>	BPTOT		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<input type="checkbox"/> ○ <a href="#">How many days stay in bed due to back pain, past 30 days (calc)</a>	BPBEDCV		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<input type="checkbox"/> ○ <a href="#">How many days limit activities due to back pain, past 30 days (calc)</a>	BPDAYCV		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

Add Checked Items to Cart

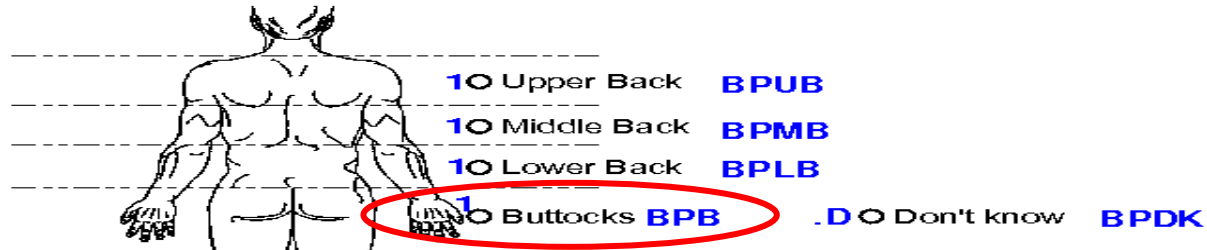
# Annotated data collection form

## BACK PAIN and FUNCTION

The next questions are about back pain.

- 43** During the past 30 days, have you had any back pain? **BP30**  
 Yes  No  Don't know  Refused

- a.** How often were you bothered by back pain in the past 30 days? **BP30OFT**  
 (Examiner Note: Read response options. OPTIONAL - Show Card #3.)  
 All of the time  Most of the time  Some of the time  Rarely  Don't know
- b.** When you had back pain, how bad was it on average? **BPBAD**  
 (Examiner Note: Read response options.)  
 Mild  Moderate  Severe  Don't know
- c.** In what part or parts of your back is the pain usually located?  
 (Examiner Note: REQUIRED - Show Card #4. Mark all that apply.)



- d.** During the past 30 days, have you limited your activities because of back pain?  
**BPACT**  Yes  No  Don't know  (Refused) **BPACTCV**

- i.** How many days did you stay in bed because of your back? If you are unsure, please make your best guess.  
**BPBED**   days  Don't know **BPTOT**  
**BPBEDCV**
- ii.** How many days did you limit your activities because of your back? Do not include days you stayed in bed. If you are unsure, please make your best guess.  
**BPDAY**   days  Don't know **BPDAYCV**



# Descriptive statistics

The screenshot shows the OAI Data Explorer interface. The breadcrumb trail is: >> Data & Documentation >> Search/Browse >> Longitudinal Details. The selected label is 'Back pain location, buttocks'. The dataset is 'Joint symptoms/function'. The category is 'Back pain' and the subcategory is 'Back pain'. The descriptive statistics table shows data for Screening, 12 month Annual, and 24 month Annual periods. The 'Back pain location, buttocks' label is highlighted in yellow in the 'Related Labels' table.

**SAVE** Label: Back pain location, buttocks

Dataset: Joint symptoms/function [Download](#)

Category: [Back pain](#) SubCategory: [Back pain](#)

**Descriptive Statistics:**

Variable Name	Screening		12 month Annual		24 month Annual	
	N	%	N	%	N	%
P01BPB	315	100	176	100	156	100
..Missing Form/Incomplete Workbook			155		254	
.A:Not Expected	4481		2355		2275	
.M:Missing					1	

**Related Labels:**

Label	Root
<a href="#">Any back pain, past 30 days</a>	BP30
• <a href="#">How often bothered by back pain, past 30 days</a>	BP30OFT
• <a href="#">When had back pain how bad was it on average, past 30 days</a>	BPBAD
• <a href="#">Back pain location, upper back</a>	BPUB
• <a href="#">Back pain location, middle back</a>	BPMB
• <a href="#">Back pain location, lower back</a>	BPLB
• <a href="#">Back pain location, buttocks</a>	BPB
• <a href="#">Back pain location, don't know</a>	BPDK

# Data explorer

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- Another powerful tool available on OAI Online to become familiar with data
- Generate descriptive statistics
  - Frequency distributions
  - Cross tabulations



# Data explorer

DataExplorer [Help](#)

Note: variable name= "visit prefix"+"variable root".

Statistical measures returned will depend on the data type of each variable.

Example **categorical** variables are: P02SEX, P02RACE, P02KSURG

Example **continuous** variables are: V00AGE, P01HEIGHT, P01KPACTD

**Subset example:** if you want data from participants >60 yrs and >85 kg who have had knee surgery, enter the following in the subsetting criteria box:  
V00AGE>60 AND P01WEIGHT>85 AND P02KSURG=1

Statistics for a Single Variable

variable name

subsetting criteria (optional)

Joint Statistics for Two Variables

variable1 name      variable2 name  
P01KSX      X      P01XRKOA

subsetting criteria (optional)  
V00AGE > 60 AND P01BMI < 25

## Joint Statistics for Two Variables

variable1 name

P01KSX

X

variable2 name

P01XRKOA

subsetting criteria (optional)

V00AGE > 60 AND P01BMI < 25

Go

Clear

Baseline:

- Knee pain status (KSX) vs. Radiographic OA (XRKOA)
- Only in elderly people who aren't overweight



# Data explorer cross tabulation

http://65.175.48.16/cgi-bin/broker.exe?VarCrossA=P01KSX&VarCrossB=P01XRKOA&WhereB=V00AGE+%3E+60 - Windows Internet Explorer

http://65.175.48.16/cgi-bin/broker.exe?VarCrossA=P01KSX&VarCrossB=P01XRKOA&WhereB=V00AGE+%3E+60+and+P01BMI+%3C+25&Go=Go&printerFriendly=on&\_service=default&\_program=oaiprogram.DataExplorerStats.sas&\_debug=2

Table of P01KSX by P01XRKOA

P01KSX	P01XRKOA				Total
Frequency	0: Neither	1: Right knee only	2: Left knee only	3: Both knees	
Percent					
Row Pct					
Col Pct					
.M: Missing	1	0	0	2	3
	0.17	0.00	0.00	0.34	0.51
	33.33	0.00	0.00	66.67	
	0.34	0.00	0.00	1.20	
0: No pain either knee	77	10	15	22	124
	13.18	1.71	2.57	3.77	21.23
	62.10	8.06	12.10	17.74	
	26.46	13.70	28.30	13.17	
1: Infreq pain 1 knee, no pain other knee	52	16	9	45	122
	8.90	2.74	1.54	7.71	20.89
	42.62	13.11	7.38	36.89	
	17.87	21.92	16.98	26.95	
2: Infreq pain both knees	68	12	9	36	125
	11.64	2.05	1.54	6.16	21.40
	54.40	9.60	7.20	28.80	
	23.37	16.44	16.98	21.56	

Done

Internet 150%

# Shop 'til you drop



- Personal shopping cart ('My Cart')
- Store variables that you select
- Access later
- Create custom codebook and save for offline work
  - Variable names
  - Statistics
  - Comments
- Download dataset(s) containing your variables

# Imaging



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clinical | **imaging** | search/browse | forms | operations manuals | DataExplorer | FAQ | tutorial

>> **Data & Documentation** >> **Imaging**

## Imaging Data

- [Requesting images](#) - procedures to request and obtain X-RAU and MRI images
- [Imaging Data Use Agreement](#) - complete and send to the UCSF Coordinating Center when requesting images
- [Operations Manuals](#) - This link is to all the manuals ordered by visit, you will need to click on a visit to view the operations manuals for MRI and XRAY images.
- [Example Images](#) - Examples showing types of images typically available from participants with varying degrees of OA.
- Summary QA reports on MR scanner performance are available. Please contact us by email at [OAIOnlineFeedback@psf.ucsf.edu](mailto:OAIOnlineFeedback@psf.ucsf.edu) if you would like a copy.

## Visit Schedule and Assessments

- [Examination Measures](#)
- [Questionnaire Measures](#)

## Image Releases

Image releases are listed below. Please refer to the ref# when making a [request](#) for images.

See [OAI data release version logic](#) for an explanation of both the clinical and imaging data version conventions.

Images will be distributed upon request via hard-drives and will be accompanied by a **Dicom Image Release Notes (DIRN)** file for that release. DIRNs are available for download via the links below. They contain the following sections:

- Participants and images included - selection criteria for participants and types of images available
- Disk Contents - file hierarchy on the disk





# OAI biospecimens available soon

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- Annual collection of biospecimens
  - Serum
  - Plasma
    - EDTA
    - Citrated
  - DNA
  - Urine
- Biospecimens (including DNA) from baseline, 12-mo, and 24-mo available for request



# Application process for biospecimens

- Interested investigators encouraged to apply
- Complete application form and proposal
  - Specify and justify amount of specimen requested
  - Include data sharing plan
    - All data generated from biospecimen use will be made available to public via OAI Online website
  - Submit to [OAI biospecimens@kai-research.com](mailto:OAI_biospecimens@kai-research.com)
- Review process
  - Biospecimen Review & Allocation Committee (BRAC)
  - Proposals reviewed for feasibility, scientific merit and consistency with OAI goals
  - Full review process takes 6-10 weeks
  - Specimens released once funding confirmed



# Application submission deadlines

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**OAI application  
submitted to KAI**

Jan 15  
May 15  
Sept 15

**BRAC  
review**

Feb/March  
June/July  
Oct/Nov

**NIH application  
receipt dates**

June/July  
Oct/Nov  
Feb/March



# Publication guidelines for public data users

- Encourage use of public datasets
- Ensure appropriate citation and acknowledgement of OAI
- Inform us about OAI publications
  - Publications tracked on OAI Online
  - Electronic archive of OAI publications
    - PDFs posted if available and permitted by copyright holder



# Another option: collaborate with OAI investigators

- Participate in OAI publications review process
  - E-mail: [OAI Publications@psg.ucsf.edu](mailto:OAI_Publications@psg.ucsf.edu)
- Submit analysis proposal to OAI Publications Committee for feedback and approval
  - Constructive critiques
  - Analytic guidance
  - Avoid unintended duplication of effort
  - Foster collaboration among OAI investigators
  - High quality publications based on valid use and interpretation
- Good housekeeping seal:
  - “This manuscript has received the approval of OAI Publications Committee based on review of scientific content and data interpretation”



# Summary

- Wealth of information (n=4,796)
  - Imaging (MRI , x-rays, image assessments)
  - Examination and questionnaire measures
  - Biospecimens
- Online tools available to facilitate data access
  - Tutorial
  - Search and browse
  - Data explorer
  - Descriptive statistics, cross tabs
  - Variable guide
- Publications Committee
  - E-mail: [OAI Publications@psg.ucsf.edu](mailto:OAI_Publications@psg.ucsf.edu)
  - Submit analysis proposals
    - Constructive critiques
    - Analytic guidance

