The Modules: Shoulder

This module was released as an addition to the existing Socrates program in late 2009. We'd like to thank all the surgeons who have had input, in particular Drs Matt Provencher, (San Diego, USA) and Jerome Goldberg, (Sydney, Australia), who have put up with dozens of emails, questions, and have provided much of the initial content for us to work with. We welcome feedback from users.

This module deals with most shoulder procedures, both open and arthroscopic. If you find something missing let us know.

The non arthroplasty procedures in this module are primarily performed arthroscopically, but those that aren't can be recorded as open procedures by simply selecting the *approach used* on the top section of the **Surgery screen**.

Don't be daunted by what you may consider as too much data to collect when you first look through the various screens. You can select from a lot of options, from the very brief to the very detailed.

It's hard to find a balance and provide a system that gives everyone what they want. Some of you will want to record detailed information about all of your procedures if your focus is collecting data for publication. Others of you will throw your arms up in horror at this level of detail, and will just want to use the program to track what you've done by diagnosis and procedure name, (and maybe any complications and a patient score to make sure that the patient was happy).

Also, since Socrates will be with you for your entire practice, what you use it for now will change over time: you may decide to follow different surgeries and patients in varying levels of detail.

Regulatory and reimbursement changes are ever-present, and it may become mandatory to follow some of the new procedures and implants in a different level of detail over time. Socrates will let you adapt your needs to cover all the possible scenarios. It's like a one-size-fits-all program, even if you do get a bit lighter or heavier over the years. There is quite a bit of *customisation* possible also, and we regularly add new fields and scores as they become necessary due to changes in technology and technique.

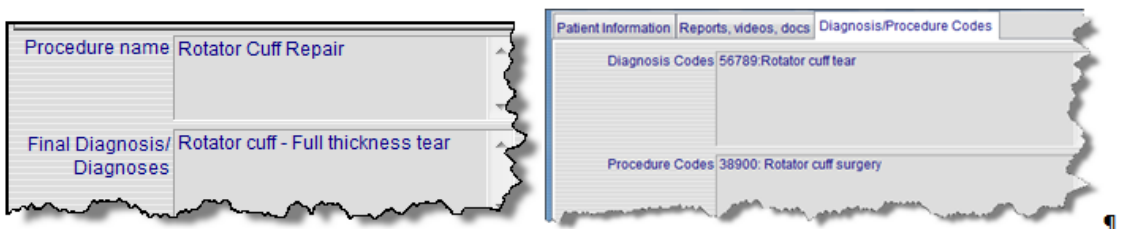
You can set up "Favourites" for some of the screens so that almost all the fields that you might routinely check for some procedures would be populated with one tick for those surgeries. Some procedures such as trauma and chondral lesions aren't set up for these features, they are not as common and there's not a lot that's routine about them. For those that are, you would then just change the details in the cases that are different from the Favourite, add anything non-standard (such as the tear or lesion sizes), and Save. This takes less than a minute. Some surgeons have as many as 15 operations saved, one click, 30 seconds making any changes, and you have a huge amount of data captured, and an op report can be generated.

Take a bit of time to look around and decide what screen you are going to use for what procedures.

An Example

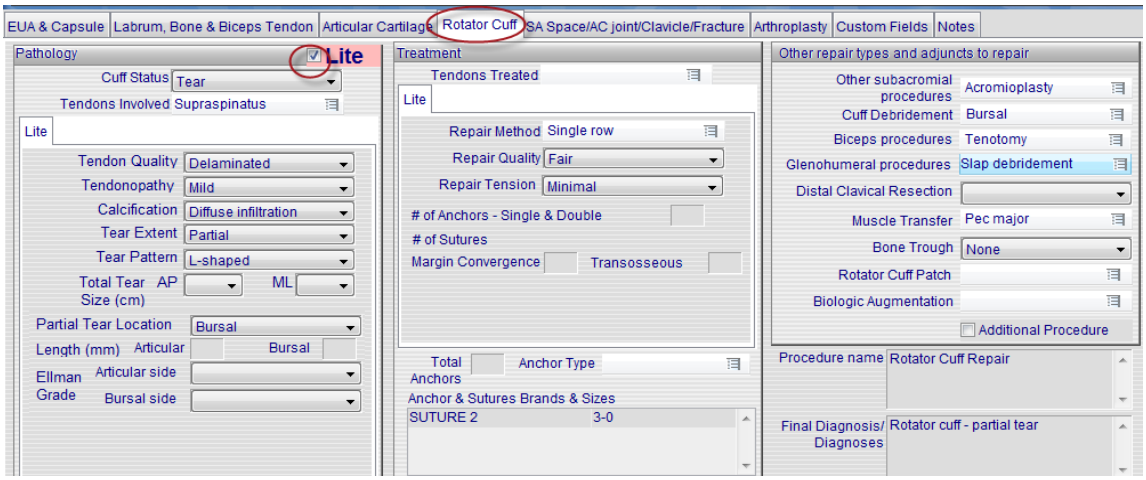
Let us show you an example of the various levels of detail that you could collect for a rotator cuff procedure.

You can go really "Lite" and just record the Diagnosis and Procedure Name, with or without a Patient Score. This minimal approach still enables you to track what you did, and what happened. You can also use the diagnosis or procedure codes lists.

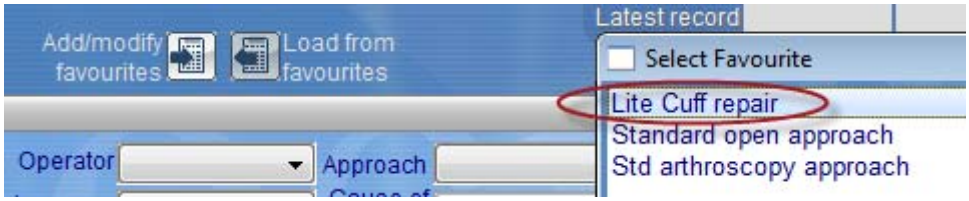


-- OR --

Enter more data using the Rotator Cuff tab, but choose the "Lite" option. This just treats the cuff as one tendon, although you have the option of selecting which tendons were involved.

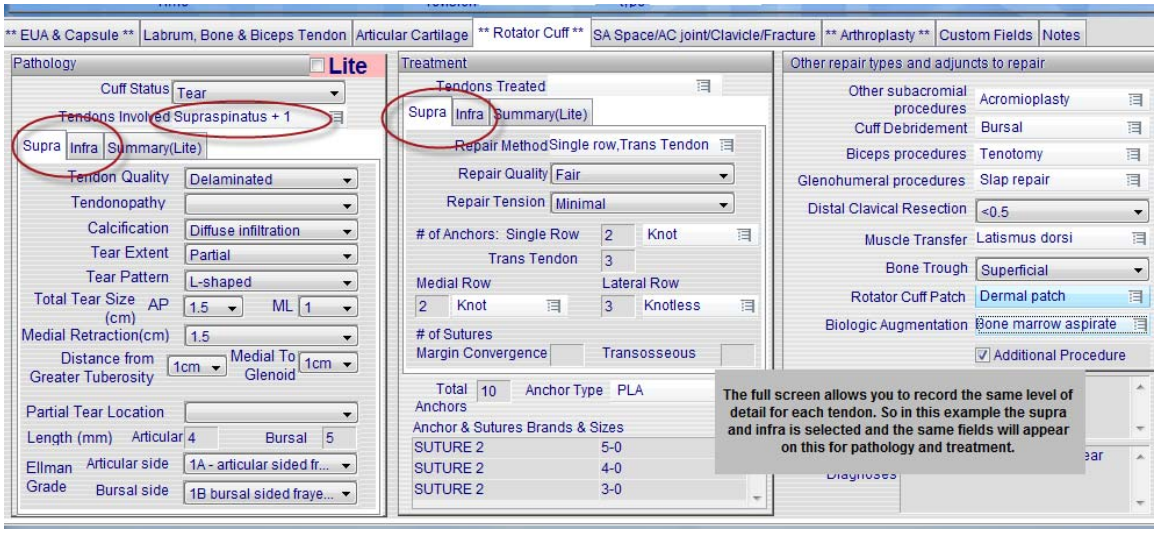


This “lite” screen could be populated with one tick from the Favourite, selected here as “Lite Cuff Repair” (set up previously). Just add any changes made for this specific surgery, and you have your operation entered.



-- OR --

Go the whole hog, and use the full version of the cuff screen, which allows you to record the same level of detail for all four tendons. You can also use the Favourites here; for example, you could set up a Favourite for a partial tear of the supra and infra tendon, with all the details you normally do.



Hopefully by the time you’ve got this far, you’ve realised that you have many options over the level of data you choose to enter, and it won’t have to take you as long to enter the data as it did to do the operation....

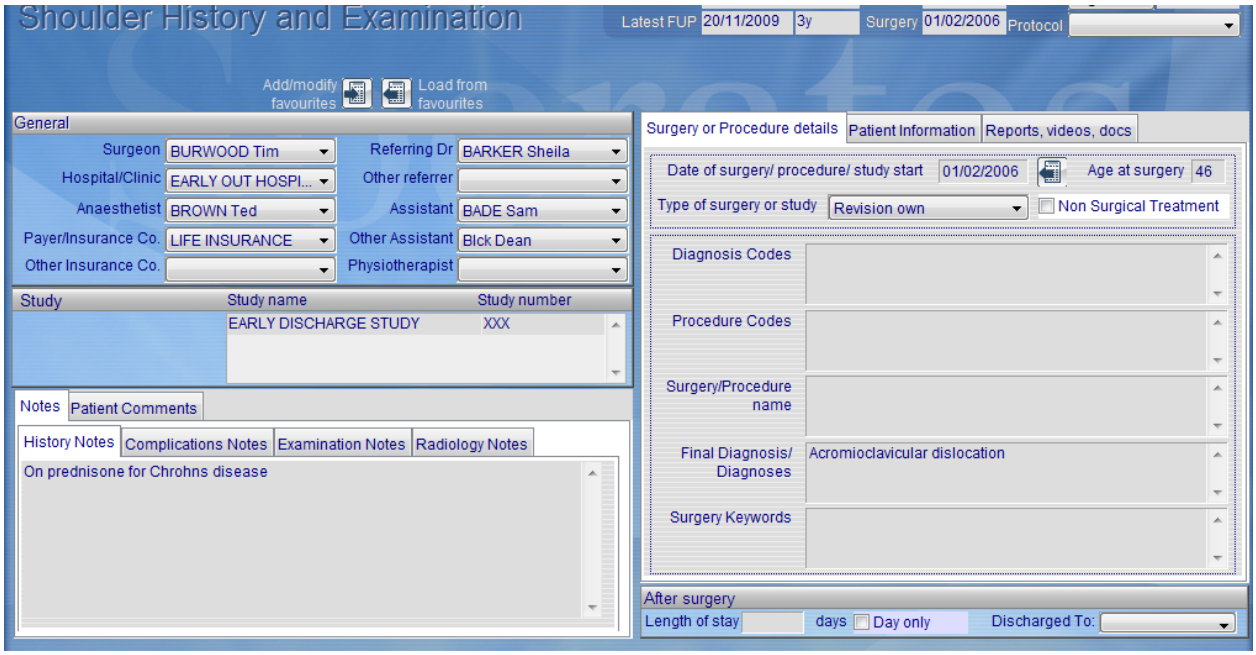
The procedures covered in this module are on the tabs below.

But we will start from the beginning, with some information about some of screens you need to know about before you get to the surgery details.

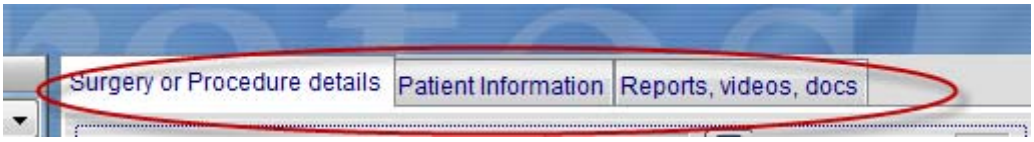
HISTORY SCREEN

The first section of this screen records **General Details**: Surgeon, Hospital, Assistants, Referring Dr and Insurance companies. Any **studies** the patient may be enrolled in are entered in the next window (these are created in the Set-Up screen).

Note: Any notes that may have been entered on the other screens are also displayed on the front screen.



On the right of this screen are 3 tabs.



Surgery or procedure details

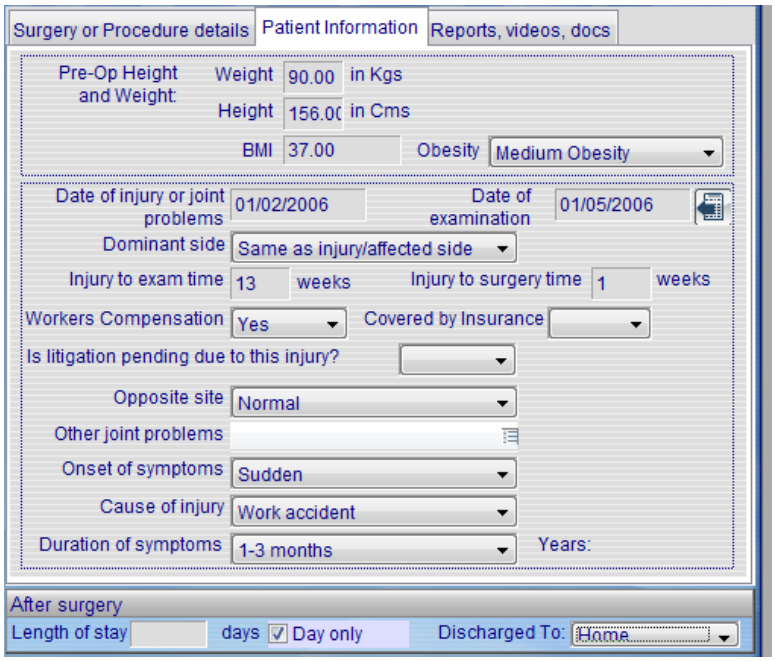
The first captures the date of the surgery or beginning of the treatment to be added. We usually refer to a surgery but Socrates can be used for any procedure, or non-operative treatment as well. It just needs a date to be entered as a baseline so follow ups can be calculated, i.e. 3 month, 1 year, 5 year follow up.

The diagnosis and procedure name can be entered in one of two ways – using a clinically descriptive term and or the codes that you might use – CPT, ICD etc.

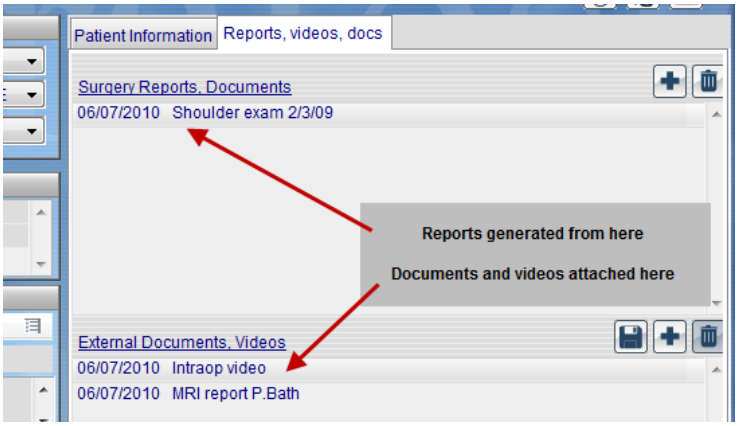
Why are there two? Codes used for billing might not be descriptive enough for research, nor are they always what's done since they often don't keep up with technology. Plus you might want to use your own descriptive terms for the different surgeries you do. You can add, remove or import your own lists of these at any time. So you have the option of choosing which you want to use, or both. You will need to import your own codes lists, there are too many in the world for us to import them all, and often surgeons only use a small number of the codes in their own practice. It's easy to import them in one list, or just add them in as you go - see the chapter on Set Up.

Patient information

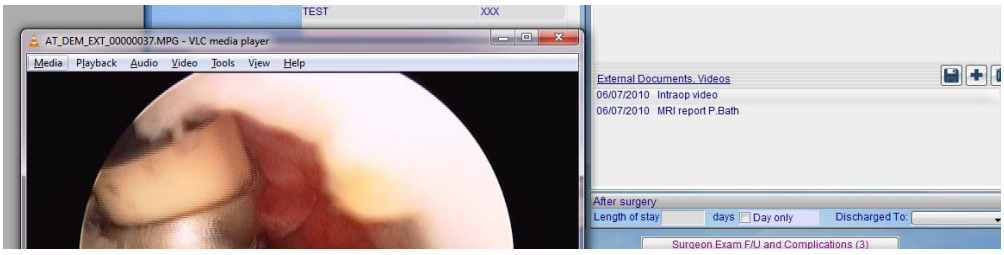
The next captures some information about the history of the patient's weight and height, BMI (calculated by the program) some details of their injury, workers comp, insurance status, litigation pending, how it occurred, the duration of symptoms, and length of stay.



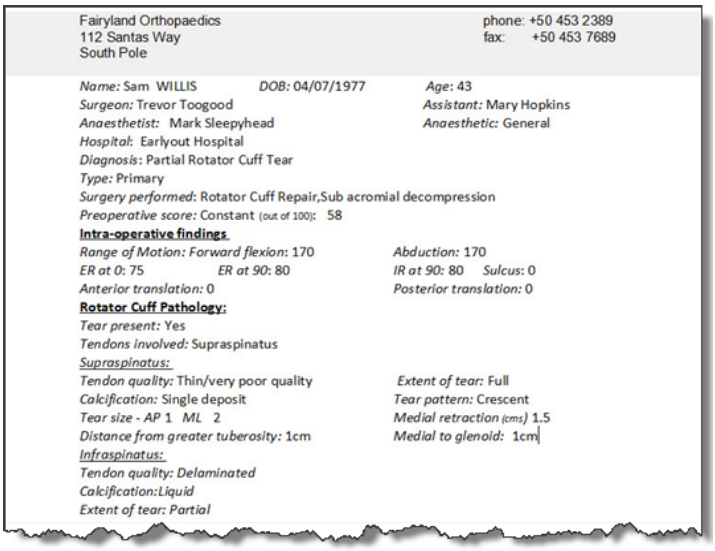
Reports, Videos and Documents



Videos and any type of **electronic document** (PDF, Word, Excel, etc.) can be imported and stored with the surgery record for viewing. Simply click on the **Add icon** to attach a document or video relevant to this surgery. See the chapter on X-rays and videos for more information.



Reports, such as **Surgery Reports** and **Examination Reports** can be generated from the fields you entered into the program. They are generated and stored in Socrates, exported as word or pdf documents or printed from this window. They work like a word processing document with a macro set up. As long as the data is entered into Socrates you can generate a report from it. Here's an example of a Rotator Cuff Repair operation report.

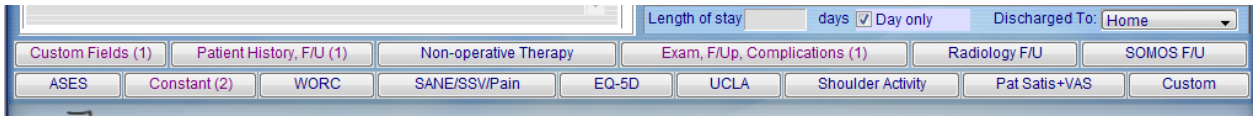


Fairyland Orthopaedics
112 Santas Way
South Pole

phone: +50 453 2389
fax: +50 453 7689

Name: Sam WILLIS *DOB:* 04/07/1977 *Age:* 43
Surgeon: Trevor Toogood *Assistant:* Mary Hopkins
Anaesthetist: Mark Sleepyhead *Anaesthetic:* General
Hospital: Earlyout Hospital
Diagnosis: Partial Rotator Cuff Tear
Type: Primary
Surgery performed: Rotator Cuff Repair,Sub acromial decompression
Preoperative score: Constant (out of 100): 58
Intra-operative findings
Range of Motion: Forward flexion: 170 *Abduction:* 170
ER at 0: 75 *ER at 90:* 80 *IR at 90:* 80 *Sulcus:* 0
Anterior translation: 0 *Posterior translation:* 0
Rotator Cuff Pathology:
Tear present: Yes
Tendons involved: Supraspinatus
Supraspinatus:
Tendon quality: Thin/very poor quality *Extent of tear:* Full
Calcification: Single deposit *Tear pattern:* Crescent
Tear size - AP 1 *ML* 2 *Medial retraction (cms)* 1.5
Distance from greater tuberosity: 1cm *Medial to glenoid:* 1cm
Infraspinatus:
Tendon quality: Delaminated
Calcification:Liquid
Extent of tear: Partial

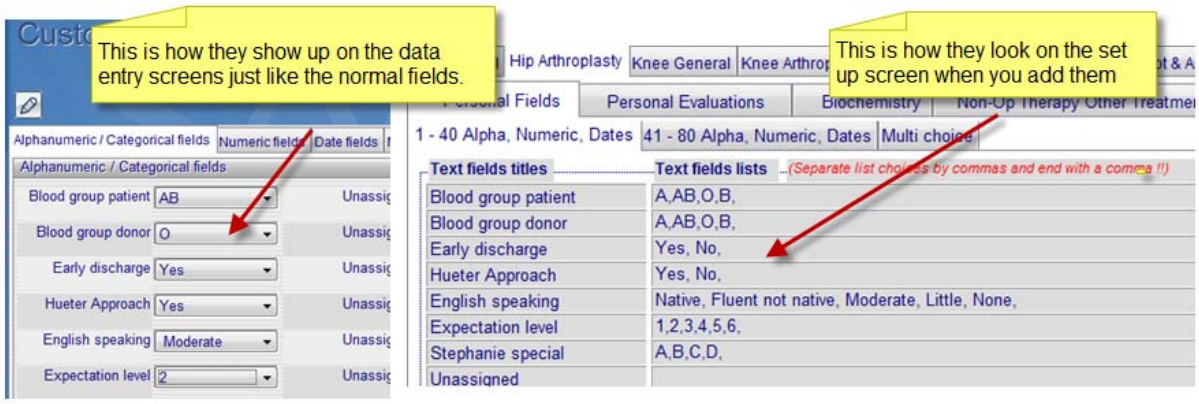
At the bottom of the history screen are two rows of tabs. The bottom are all the scores/surveys that have been selected to display – more about this later.



The top row has the following.

Custom fields

You can create your own Custom Fields and Evaluations (bottom row with the scores) to capture recurring Events. These can be new exclusive lists, multi boxes, numeric values, or dates. See the chapter on Set-Up and Customisation for details on how to add these fields. Once you have added them your new list will show up in these tabs just like the all the fields in the program. Below is an example of some custom fields set up to capture details that are not on the regular screens. It's only limited by your imagination.



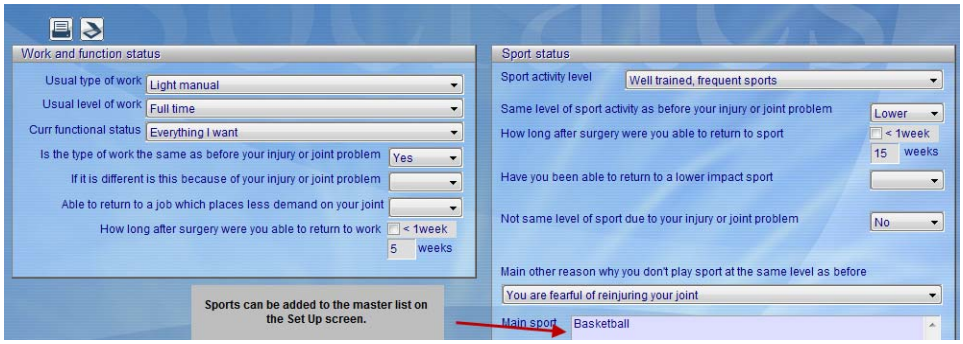
Patient History and Follow-Up Screen

You probably won't want to collect these data from everyone but if you treat high-level sports patients, or if returning to work is an important aspect of a surgery outcome, it can be useful data. The dreaded insurance companies sometime want to know this data, so it's there if you need it.

This screen tracks the patient's work, functional and sport history over the period of their follow-up until they are discharged from follow-up *for this surgery*. Questions relating to the patient's work, sporting and general

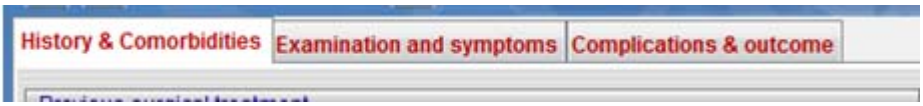
function are recorded **pre-operatively** and **at subsequent visits**. Some of the questions are only relevant post-operatively: return-to-work and sports questions, for example. The **Main Sport window** can be added, modified or deleted through the **Adaptable Fields** option on the **Set-Up Screen.** This form is scannable for both pre- and post-op follow-up. The pre-op version includes the questions from the first screen, about the history of the injury, workers' comp, duration of symptoms, etc.

This is a scannable form, both the pre- and post-op versions and these can also be filled in by the patient online just like all the web based scores.



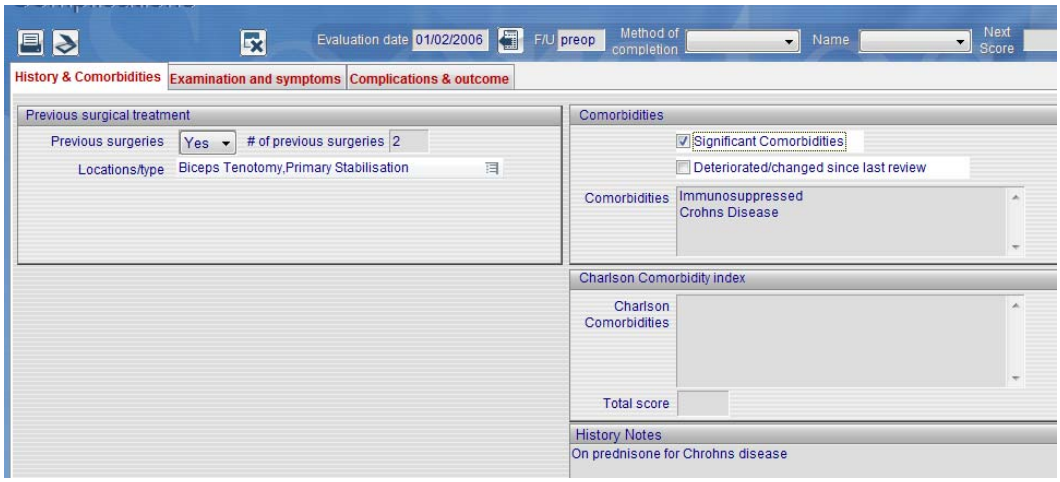
Surgeon Examination and Follow-Up Screen

This screen has 3 sections.



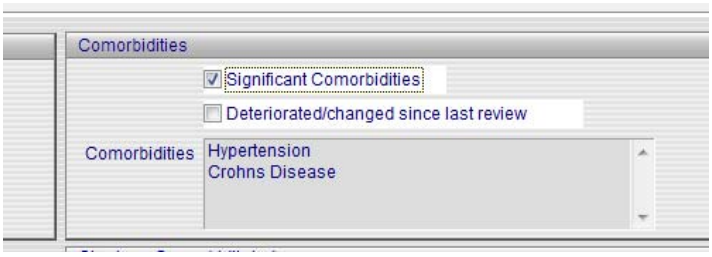
Previous Surgery Details

Previous Surgery details field allows you to record if there have been previous surgeries, the number and what they were. If you want more detail, record these in the Notes.



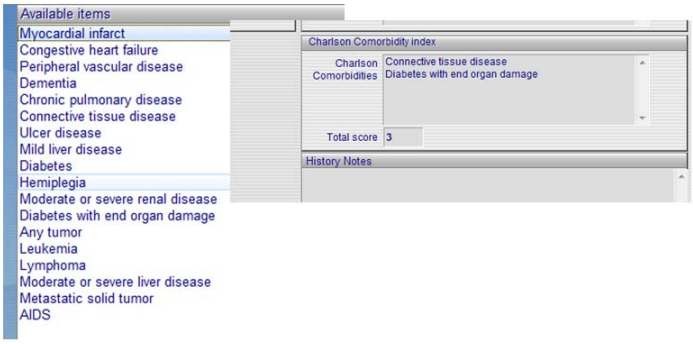
Comorbidities

It's up to you about how much detail you want to collect here but it's obviously a good idea to at least record if the patient had significant comorbidities. It's becoming more important for you to record this sort of information, patients can now go on-line and score themselves using a number of patient-related outcome scores and compare themselves to others. But we all know that all patients are not the same, if you collect some data to demonstrate this it helps to explain results that may differ between patients, and between surgeons. The list can be added to at any time, and more than one can be added to the record, and over time this may change. There is a check box to record this also.



Charlson Comorbidity Index

This is a validated list of comorbidities which when selected and totalled will give a score which can be used to classify patients according to risk, and subsequent cost to care for.



Examination and Symptoms

The first tab of **the Surgeon Exam and Follow-Up Screen**, the **Examinations and Symptoms tab,** records a detailed physical examination of the shoulder, with **sub-tabs** that record:

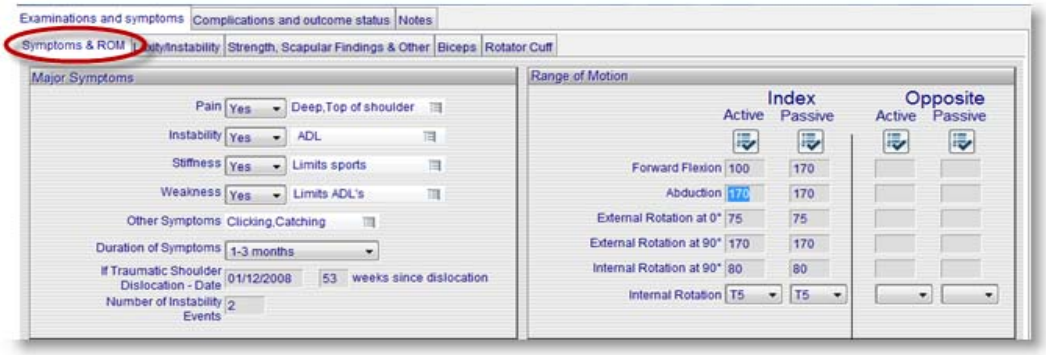
- symptoms and range of motion
- laxity and instability
- strength, scapular and other findings
- biceps tests
- rotator cuff tests.

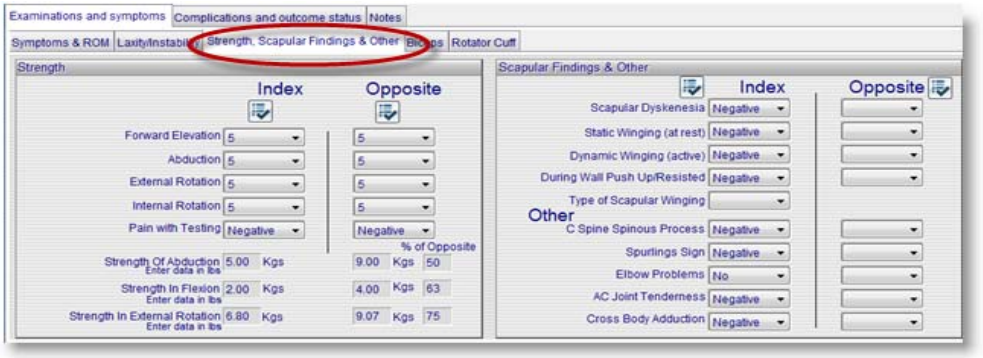
Limited details about pain are also recorded here. Pain data will also be captured in more detail on the patient's subjective assessments.

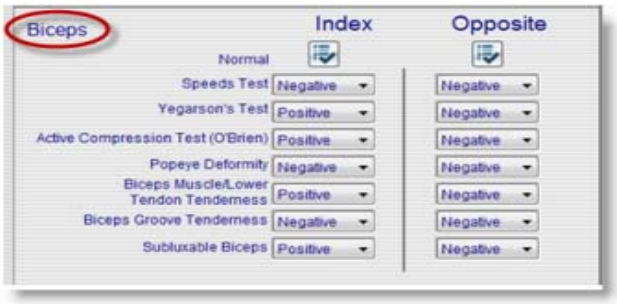
A number of diagnostic tests are included; just choose the ones you want to record. You can generate a **report** based on the data that has been entered in the program. The reports are recorded by date and a follow-up delay, assignments that are based on the surgery date. Therefore, ROM and symptoms can be tracked over time.

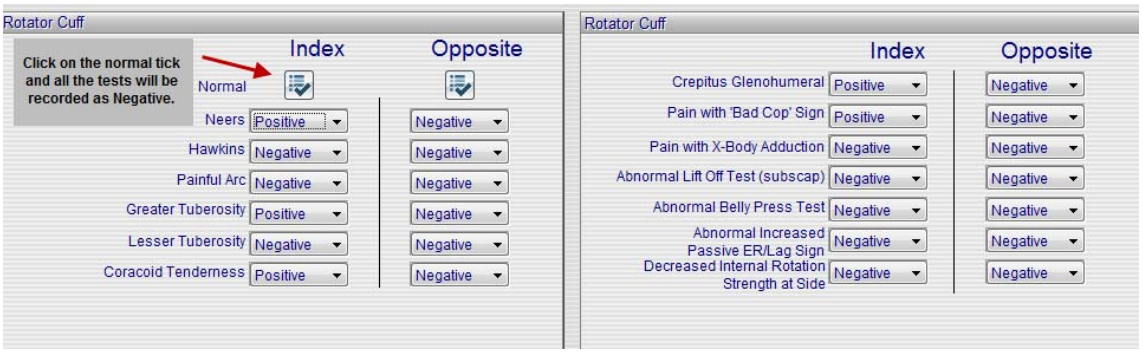
> ***NOTE: You can also capture ROM and clinical assessment on the Surgeon part of the ASES form, which can be then scanned into the program.***

Examples of the **Examination screens** are shown below.



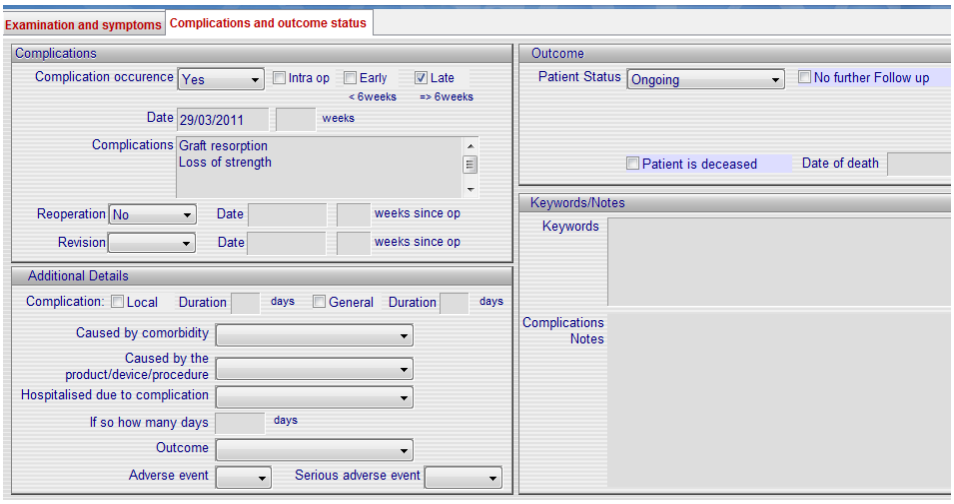






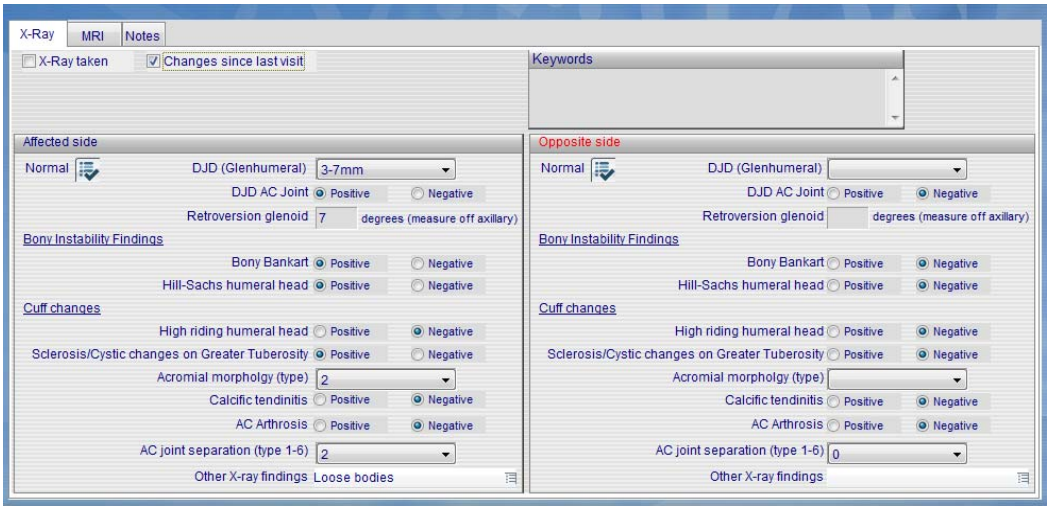
Complications and Outcome Status

The third tab of the **History screen** allows you to record details about any complications, from the very basic, to a lot more detail. You may need to collect more extensive detail if you are involved in a study, or following a new procedure or implant where complications are a key endpoint. In most cases, surgeons find it sufficient to just record a "Yes" in the Complications drop-down menu, click on the **modify icon,** and then double-click into the Complications window to record what it was. You can also collect details of failures, reoperations or revisions here.



Radiology Follow-Up Screen

Records radiological findings for X-ray and MRI.



Scores and Evaluations

The scores and evaluations for this module are displayed along the bottom of the **History screen**.

Socrates includes more scores than will fit on the screen, so you need to select which you ones you want displayed on this **History** screen. Click on the **Tools icon** to bring you to the **Set-Up screen**, and tick those you want to appear. Scores included in this module include:

- Constant
- American Shoulder and Elbow Score (ASES)
- SANE/SSV (1-100 how normal does your shoulder feel?)
- VAS pain (1-100 how bad is your pain?)
- Rowe
- Simple shoulder test
- WORC
- WOSI
- WOOS
- Oxford
- Oxford instability

- DASH and Quick DASH
- Kerlan Jobe
- UCLA
- L'Insalata
- MISS (Melbourne instability score)
- Marx activity score
- PENN
- SPADI
- Shoulder Instability score

...and Quality-of-Life and Patient Satisfaction scores:

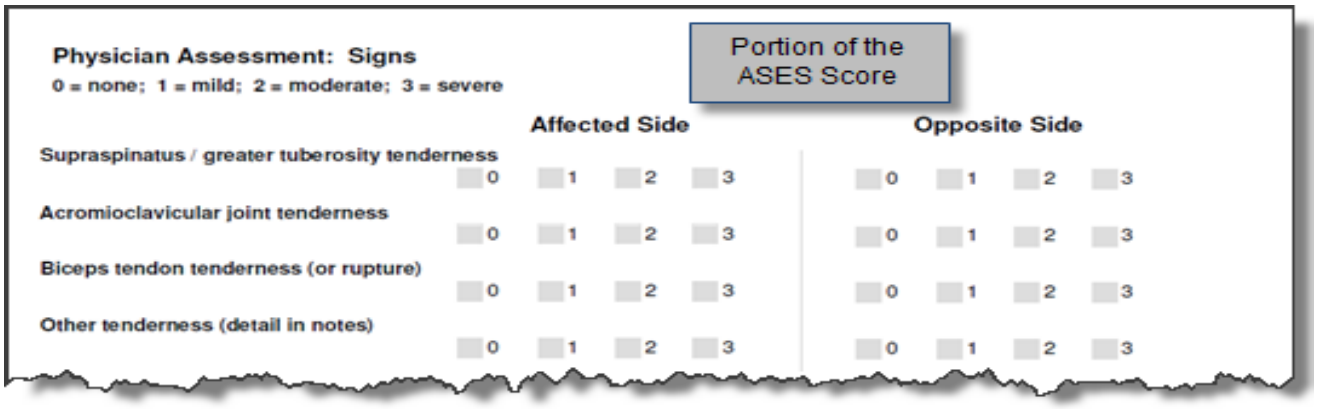
- Veterans Rand 12 and 36
- Patient Satisfaction Questionnaire
- EQ5D (Euroqol quality of life)
- GROC- global rating of change

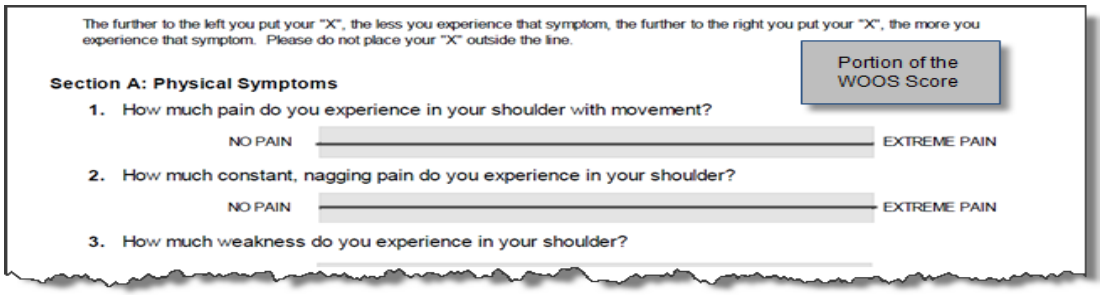
Web based data entry

The majority of these can be entered via the web directly by patients via email, or online in the clinic (English only).

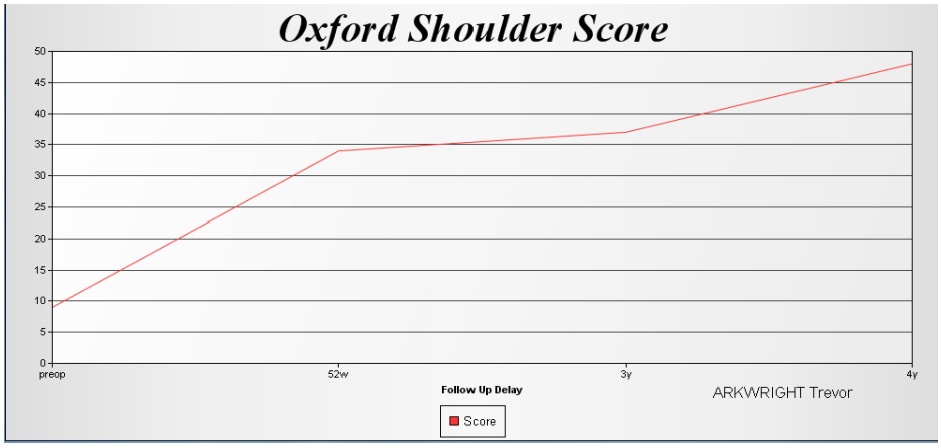
In addition the majority of scores can be scanned in using one of the Scannable forms. By scanning the forms, the responses are populated directly into Socrates. Note that scannable forms don't work on the Mac.

A section of the ASES and WOOS scan forms are shown below. You'll find that it is generally faster and more accurate to use the scan forms, especially for scores with VAS 0-100 scales which have to be measured with a rule if entering manually.





Score results can be displayed by clicking on the **results icon** (next to the trash bin) and then a **graph** can be viewed, printed or exported for the individual result.



SHOULDER SURGERY SCREEN

From the **Shoulder History Screen**, click on the **Surgery icon** to start entering data about the surgery itself.

Common Details

The top section of the **Shoulder Surgery Screen** records details of the approach, anaesthetic details, portals used, position, surgery and traction time, and type of surgery (primary, revision).

The surgery screen in this module has six Surgery tabs, (and two more for Custom Fields and Notes), and accommodates as much (or as little) detail as you want to collect. There are *no mandatory fields* other than the Date of Surgery and Type (Primary, Revision, or Re-operation).

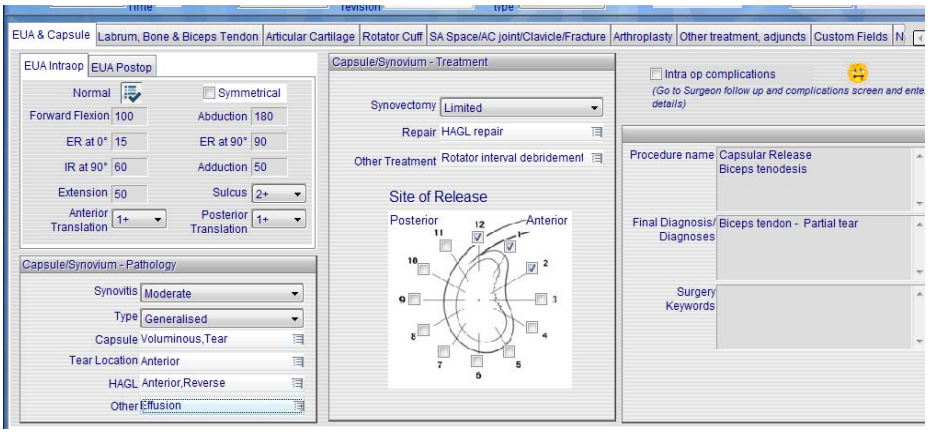
There are also several screens which have the same data fields on them for commonly occurring procedures, biceps tenodesis for example. If these are entered on one screen they will also be populated to the other places they appear. So, if you are searching for all biceps tenodesis you will find it regardless of which screen you entered it into.

The **surgical tabs** include details on the following procedures

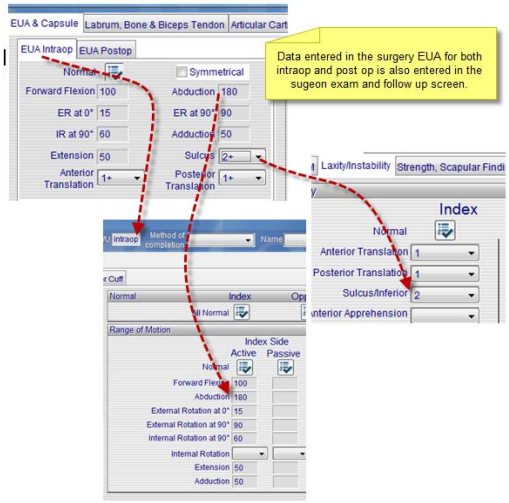
> ***NOTE: Three of the tabs have "Lite" options, for those of you who don't want to collect a great amount of detail. These are Rotator Cuff, Arthroplasty and Articular Cartilage.***

EUA and Capsule Tab

As below. The EUA can be recorded before and after the surgery and will be record as Intraop and Post op.

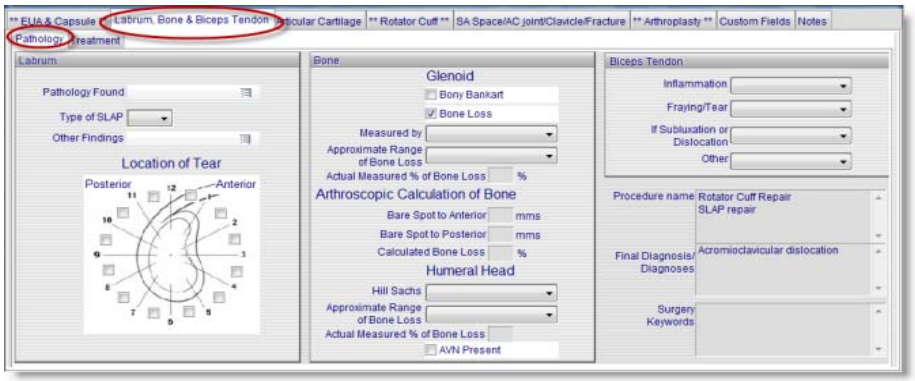


These data will also be automatically cross populated into the surgeon examination screen at the same time. Thus the intra-op and post-op ROM details will be stored in the examination screen with the preop and any post op measurements.

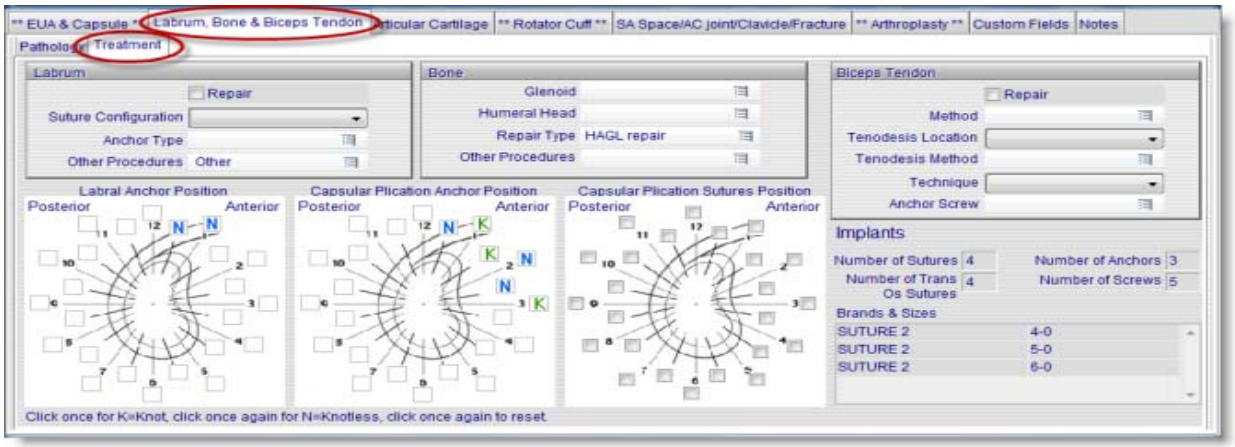


Labrum – Pathology and Treatment Tab

Note that this tab has two sub-tabs: a **Pathology screen**, and a **Treatment screen** (since it wouldn't all fit on one tab).



Treatment

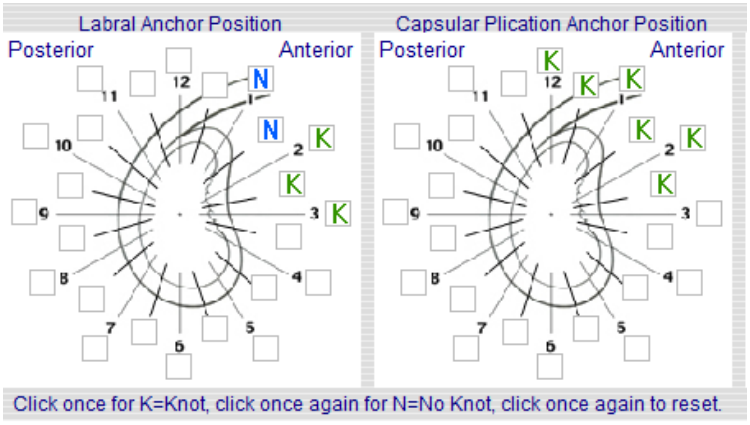


Clock Face Zones

There are several places on the surgery screen where a clock face is used to specify location of pathology or anchors. The zones are always clockwise, and only the correct view for *the side being operated on* will be displayed. Thus, 11 o'clock on the *right* is the same as 1 o'clock on the *left,* but the data is stored by its anatomic position: anterior, posterior 1, 2 etc. (regardless of the side, or whether it was at 11 o'clock or 1 o'clock).

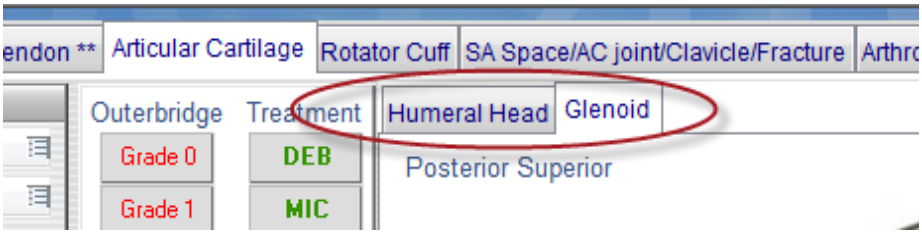
To record the anchor type, click *once for* ***Knot***, *twice for* ***No Knot***

RIGHT SHOULDER

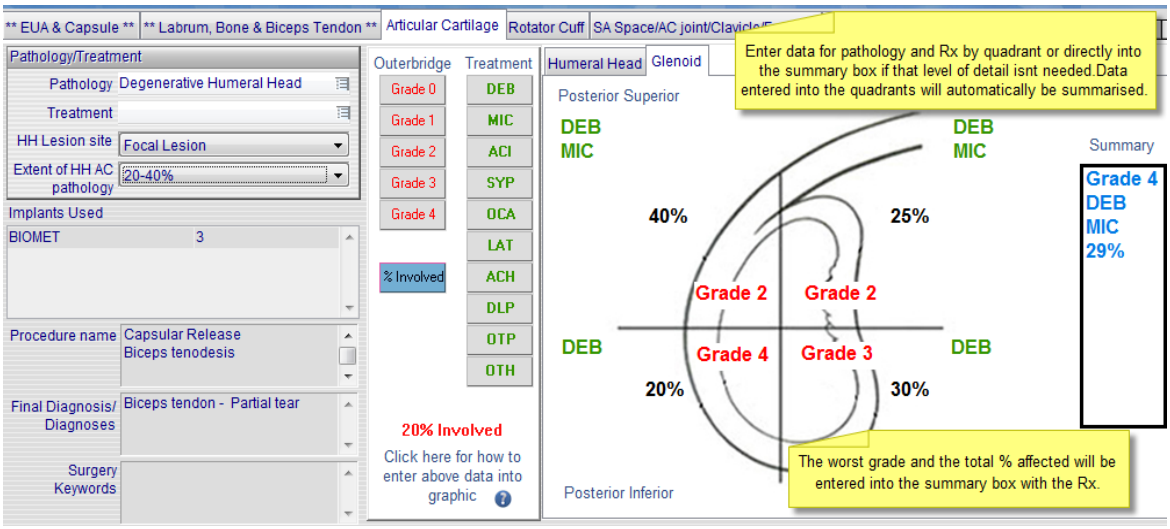


Articular Cartilage Tab

You'll see that the right side of the screen is split into **Glenoid mapping** of Pathology and Treatment, and **Humeral mapping**.

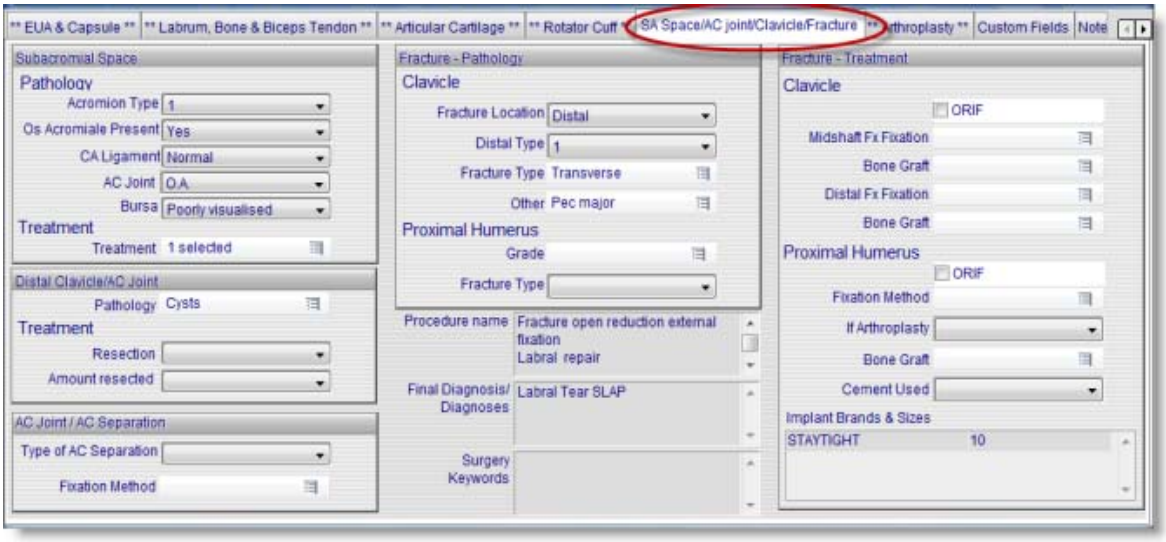


You've also got the option here of choosing the Lite version, if you don't want to select the Outerbridge grades and treatments, and the degree of damage in each quadrant. You can go straight to the summary, and just select the grade of OA and the treatment for the glenoid and humerus overall.



Sub acromial Space/Distal Clavicle/AC Joint/Fracture Tab

This screen record details of pathology and treatment to the sub acromial space, distal clavicle, and AC joint. Fracture details and treatment for the clavicle and humerus are also included.

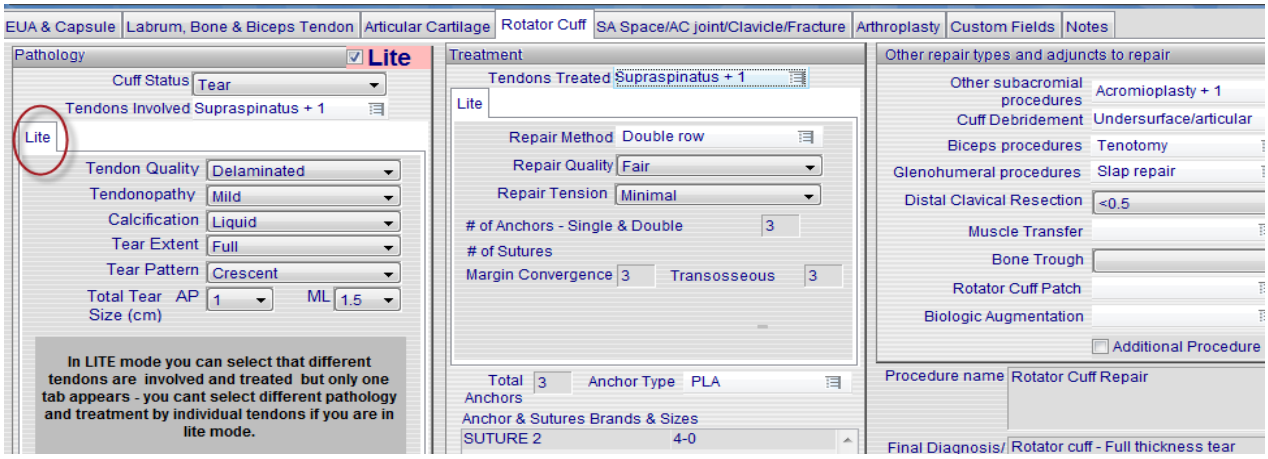


Rotator Cuff

There are two options for data entry for the cuff: using the "Lite" screen, which just treats the cuff pathology and treatment as one tendon, or entering pathology and treatment data for each of the four tendons. You got a look at this concept at the beginning of this chapter.

Lite Screen

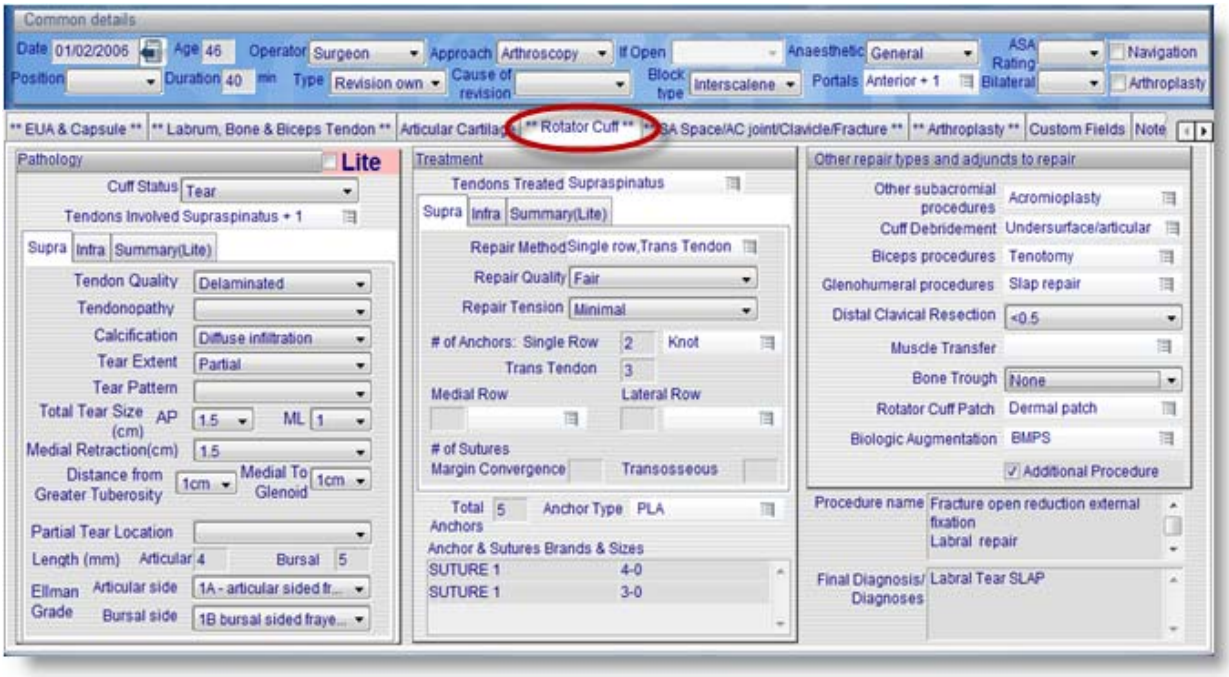
If you select the "Lite" box from the **Rotator Cuff screen**, the pathology and treatment are filled out for the cuff *overall*. The individual tendons affected and treated can be selected, but no pathology or treatment can be entered for the *individual* tendons. This option will appeal to surgeons who are interested in capturing less detail. The "Lite" screen also acts as a summary screen – it will tally up the worst options from the individual tendon screen (if they are used), and display the summary



Full Screen

If the "Lite" box is *not* checked, data can be entered for each affected tendon. In the example below, the Supraspinatus and Infraspinatus tendons have been checked, and the "Lite" box is *not selected*. Therefore, a tab will appear for **each tendon selected** to enable data to be entered for the full pathology, and the complete treatment.

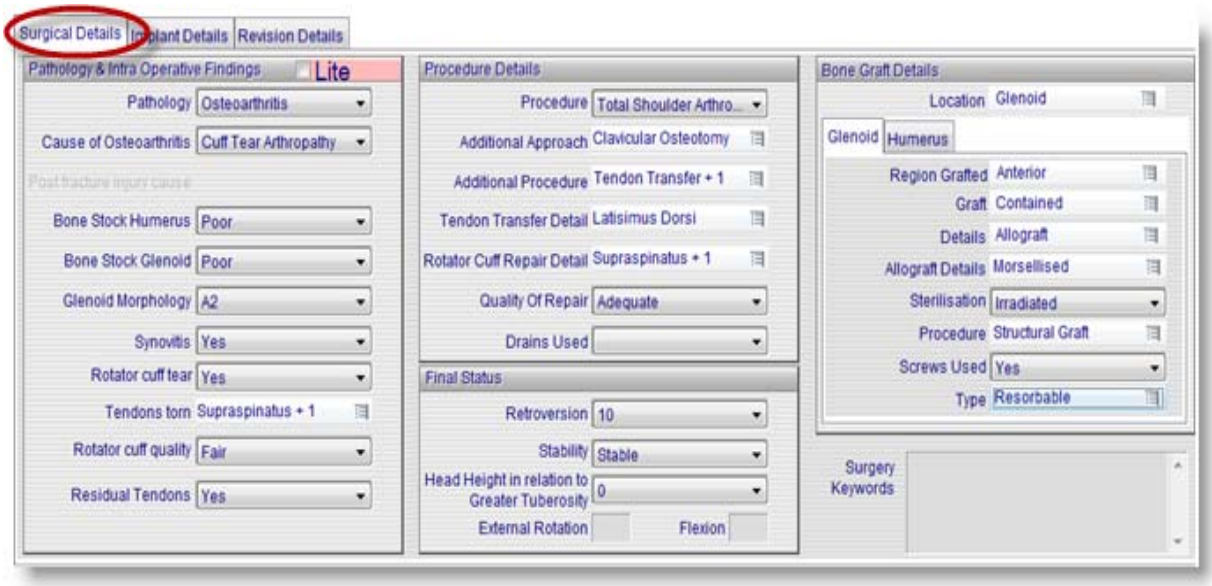
Details in the column on the far right are the same for both the full and the "Lite" screen.



Arthroplasty

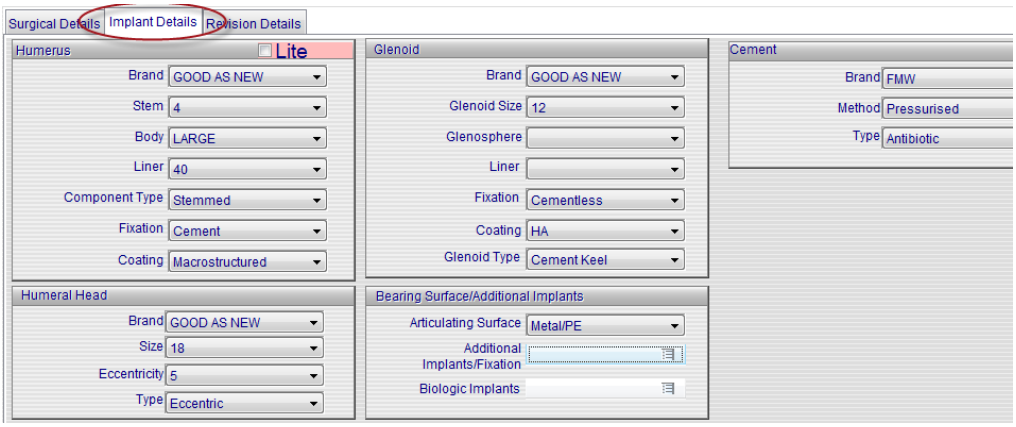
Like the **Rotator Cuff screen,** the **Arthroplasty screen** has both a full and a "Lite" screen. On the full version there are three screens available, one for **General Surgical Details**, one for **Implant Details**, and one for **Revision Details**.

General Surgical Details



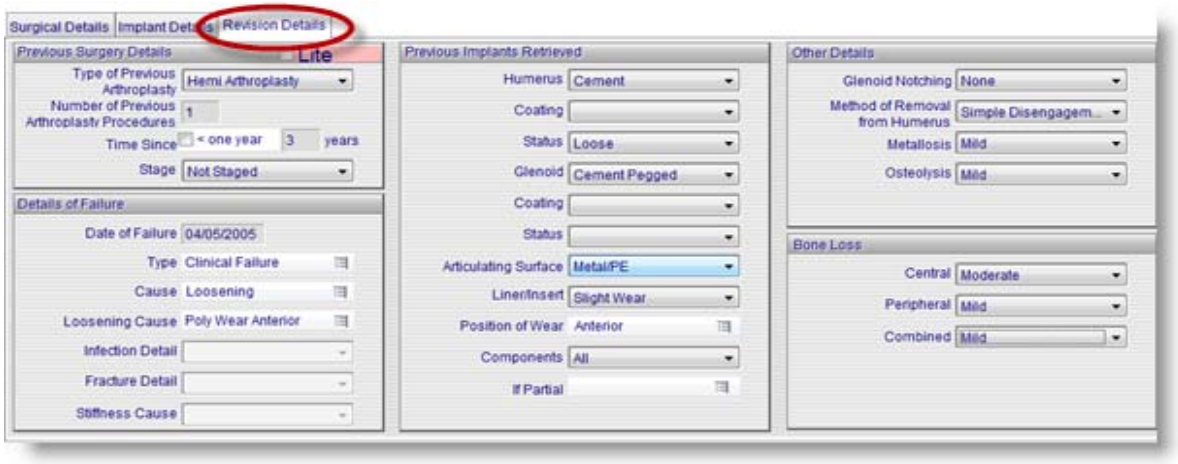
Implant Details

The next tab records the details of implants used, including sizes.



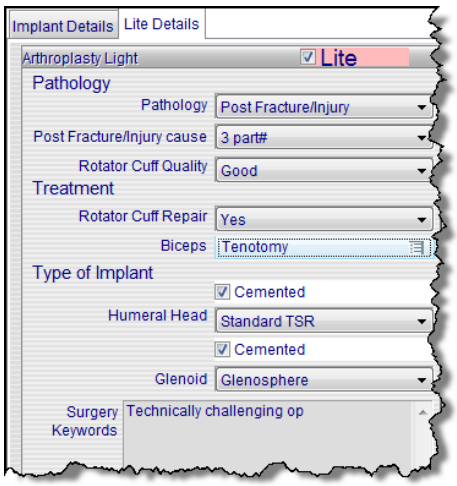
Revision Details

Additional details can be recorded for revisions.



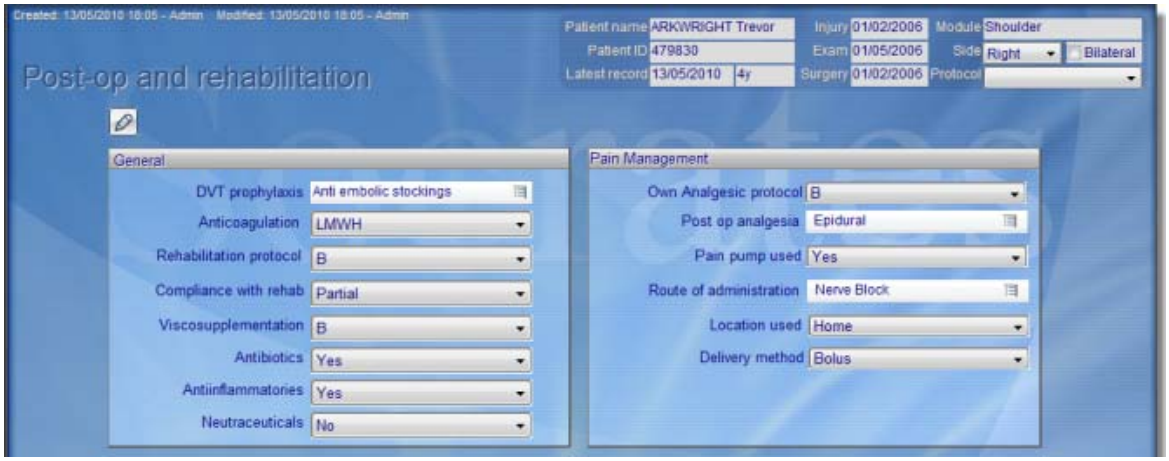
Lite Screen

If you just want to record just the basic details for an arthroplasty procedure go to the “Lite” screen.



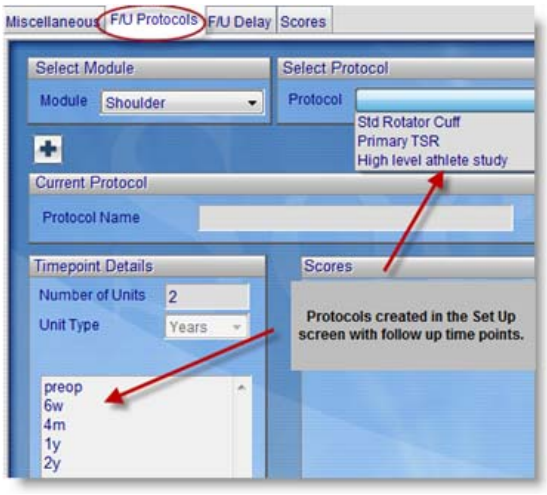
Post-Op and Rehab Screen

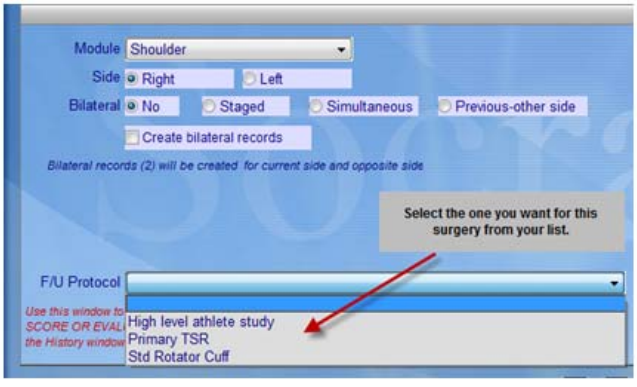
This is a window common to all modules, and is accessed by clicking on the **Rehab icon** at the top right of the **Shoulder History screen**.



Follow-Up Protocols

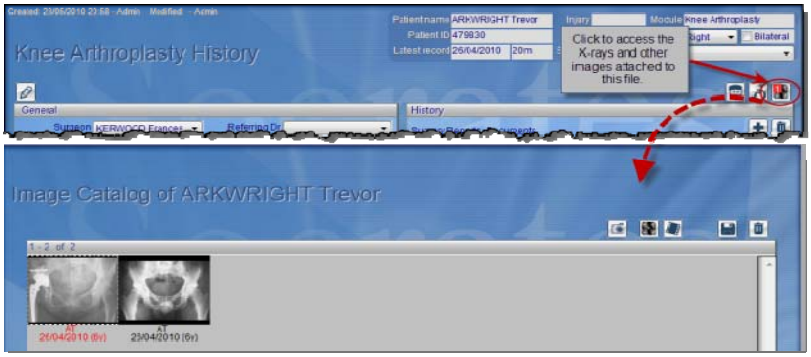
Don't lose your patients (unless you want to!). You can choose a **Follow-Up Protocol** so the program knows when the patients are due back for their next follow-up and can remind you. These are essential for the web scores as this is how the program knows what scores to send out at what time points. The different protocols in the drop-down menu are created by you in the **Set-Up screen** (**tools icon**).





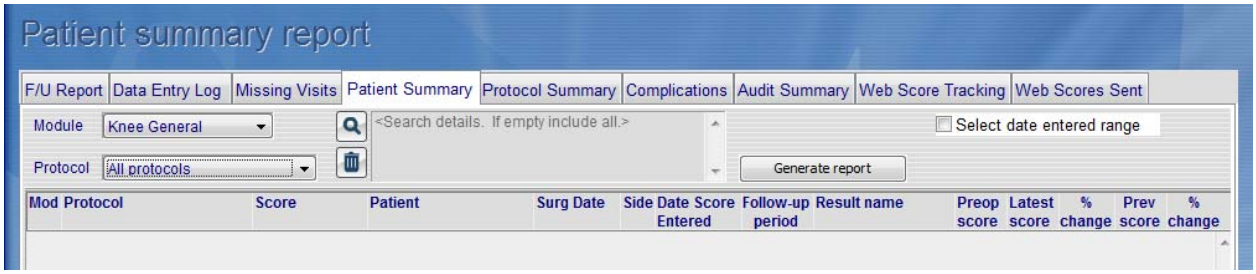
IMAGES (XRAYS, VIDEOS.)

Images can be stored, searched for, printed, and exported from the **Hip** and **Knee Arthroplasty Surgery screens**, by clicking on the **X-ray icon** on the right of the screens. See the chapter on **Images** for more details, including how to give the images **Keywords** for easy searching and selection at a later date.



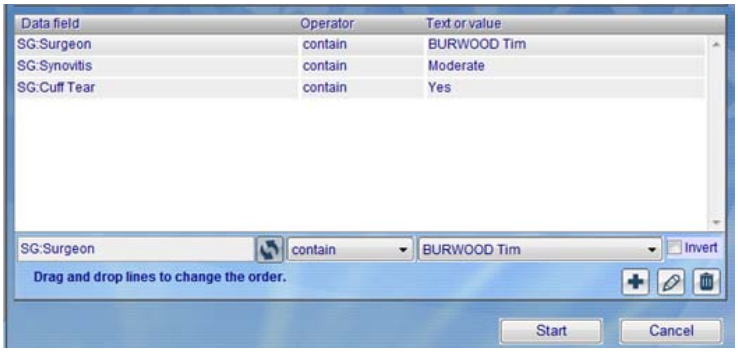
REPORTS

There are several reports built into the program which make it easy to track your patients progress, when they are due back, who has missed their time points, which have deteriorated since their last visit, and how the group are doing overall. Most of these require a protocol so the data can be grouped so it's really a good idea to spend some time setting these up.

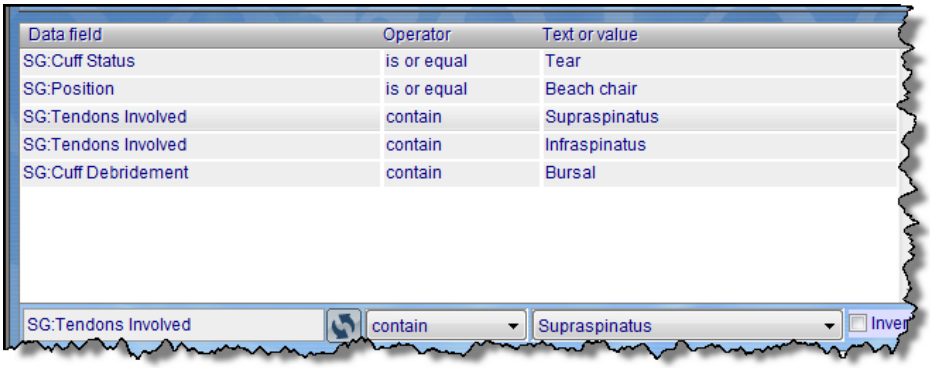


SEARCH

A specialised search function in Socrates' **Surgery screens** allows you to search for any field or combination of fields in the program. The example below shows the window that sets up a search for all surgeries with Dr Burwood with moderate synovitis and rotator cuff tear. See the chapter on Searching for details on setting up your own Searches.

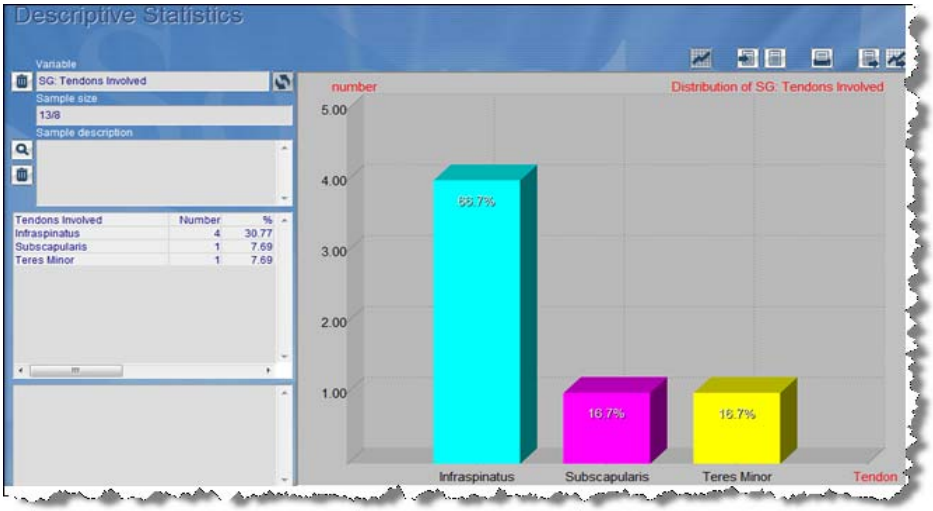


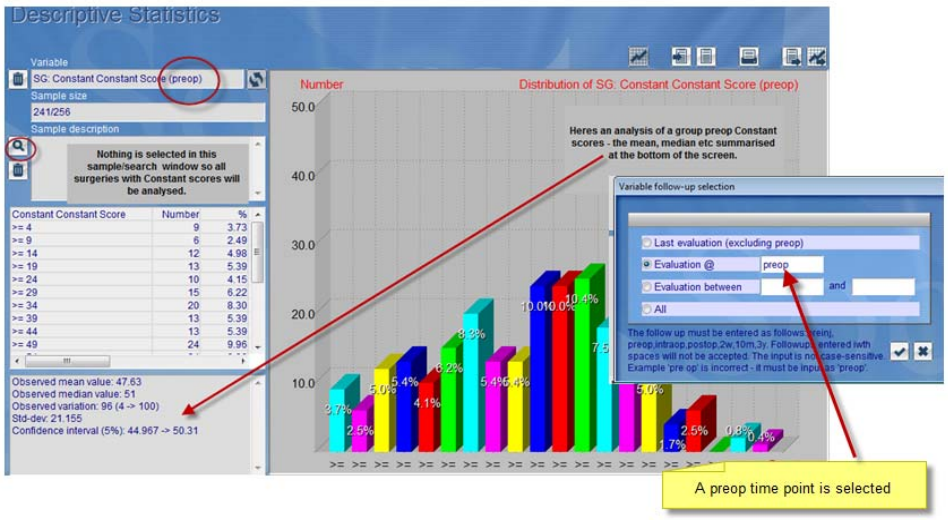
There's no limit to the numbers of parameters you can add to your search.



STATISTICS

Socrates provides you with basic Descriptive Statistics functions to enable you to calculate and demonstrate your own basic statistics without the help of a statistician. However, if you do find you want to do more sophisticated statistical analysis, all of the fields in Socrates can be exported to Excel for transfer to a dedicated stats package. See the chapter on Statistics and Export for more information.

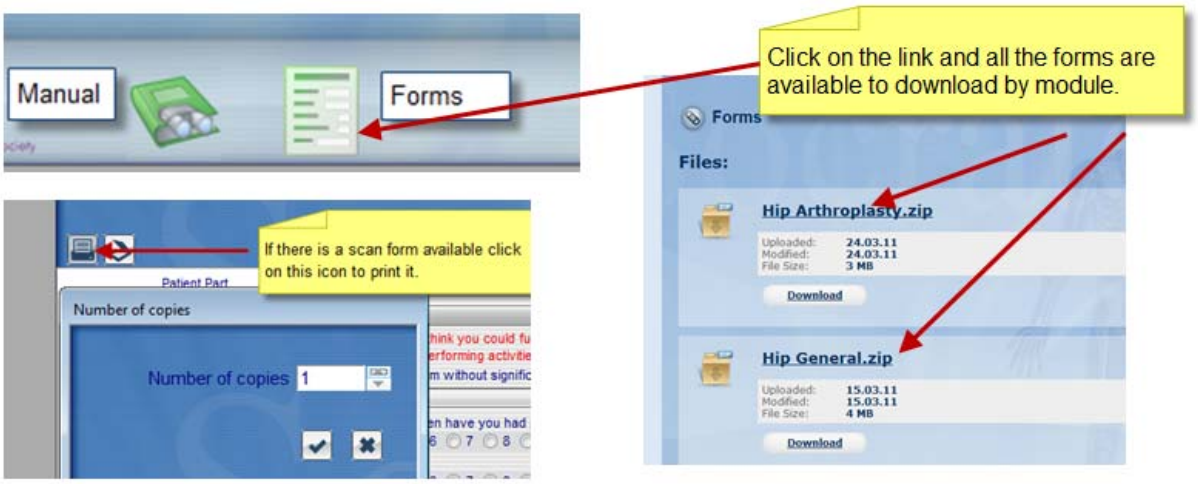




By the time you have read this you will have an understanding of the features of the shoulder module. If you are the person setting up your database you will now need to go to the Set Up chapter and start getting your database ready for your own use.

FORMS

All the screens in Socrates have forms to match. There are also scannable forms inside the all the forms folders in their individual modules folders but these can be printed out from each screen where you see a print icon. There are also scannable forms for the surgical details. On the home page there is also a link to the Socrates web site which will access the up-to-date forms.



List of forms

LEGEND
Y: these forms are available in the format of the column heading.
ALG missing: Y indicates that an algorithm is built in to the score so that if some questions are missing, a score is still possible. See chapter on scores for individual scores information.
Scan forms: forms available as a scannable PDF to capture data via a Scanner
Type: QS = patient questionnaire; SU = surgeon form; SC = Score
Patient/Surg: P indicates the patient completes the form; S is a surgeon completed form; C is combined

SHOULDER	WEB SCORE	SCAN FORM	Patient/ Surgeon
Adolescent Health Assessment (Parent)	Y		P
Adolescent Health Assessment (Self)	Y		P
AQOL4D * coming soon	Y	Y	P
AQOL6D * coming soon	Y	Y	P
AQOL6D Adolescent * coming soon	Y	Y	P
ASES Rating Scale - Patient	Y	Y	C
ASES Rating Scale - Surgeon		Y	S
Complications		Y	S
Constant Score	Y	Y	C
DASH - Disabilities of the Arm, Shoulder and Hand Score	Y	Y	P
DASH Quick	Y	Y	P
Euroqol EQ5D-3L		Y	P
Euroqol EQ5D-5L		Y	P
Flex 36 Shoulder rating		Y	P
GROC Global Rating of Change	Y	Y	P
L'insalata	Y	Y	P
MISS - Melbourne Shoulder Score	Y	Y	P
Oxford Instability Score	Y	Y	P

SHOULDER	WEB SCORE	SCAN FORM	Patient/ Surgeon
Oxford Shoulder Score	Y	Y	P
Patient History Work & Sport PreOp		Y	P
Patient Satisfaction, Normal, and Pain VAS Postop	Y	Y	P
Patient Satisfaction, Normal, and Pain VAS Preop	Y	Y	P
Patient Work & Sport PostOp	Y	Y	P
Pediatric Health Assessment (Parent)	Y		P
PENN Shoulder Score	Y	Y	P
ROWE Shoulder Score	Y		S
Sane (Normal) Pain Visual Analogue Score	Y	Y	P
Shoulder Activity Level (Current)	Y	Y	P
Shoulder Activity Level (Preinjury)	Y	Y	P
Shoulder Instability Rating		Y	S
Simple Shoulder Test (SST)	Y	Y	P
WOOS - Western Ontario Arthritis of the Shoulder Index	Y	Y	P
WORC - Western Ontario Rotator Cuff Index	Y	Y	P
WOSI - Western Ontario Shoulder Instability Index	Y	Y	P

INDEX