

# Mouthpiece



## President's Address

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The new ANZSRS website is at:

[www.ANZSRS.](http://www.ANZSRS.org.au)

[org.au](http://www.ANZSRS.org.au)

Welcome to the spring edition of Mouthpiece. It is almost time to start saving the daylight again, except if you live in Queensland! I wish to thank Belinda for her commitment to the Society and the time she devotes to each issue of Mouthpiece. I also wish her luck for her studies and new career path.

### Executive Update

I am sure you will all be pleased to know that the Executive is being kept busy. There are several ongoing Society issues at present. The development of an Executive handbook is progressing well and we hope this will assist others in the future running of the Society in conjunction with the constitution. In this issue we have included guidelines for submission of abstracts. These guidelines refer to issues that have not been written down but are important professional etiquette. The ANZSRS education scholarship application form is also included and applications close on the 30 November 2000. We will reply to all applicants towards the end of January 2001. We have decided to drop the Executive update from Mouthpiece mainly because of the repetition of issues in the President's address. The secretary will not get off lightly however; as Kevin will be submitting various statements and Society forms in Mouthpiece. Kevin has also expressed his delight at not having his photo published. John Martin has

been working hard investigating the implications of G.S.T for the Society. I would like to formally thank Kevin and John for their support and hard work for the Society.

### ANZSRS web page

The ANZSRS web page is an exciting new development and many thanks to Jeff Pretto who has been responsible for getting this initiative up and going. Please let Jeff know your thoughts on this site: [www.anzsrs.org.au](http://www.anzsrs.org.au)

### CRFS

I am delighted to see the success of a few more members passing the CRFS exam this year. If you have not yet attempted this examination I urge you to do so, particularly the more senior members. I wish to acknowledge and thank Stephen West for his continued commitment and professionalism in organising and running these examinations on behalf of the Society.

### HIC and the Relative Value Study

Many of you will already be aware of the Relative Value Study conducted by the Health Insurance Commission over the last couple of years. Pricewaterhouse Coopers have been commissioned to produce a Practice Cost Report for various Item Numbers in the Medicare Benefits Schedule. The draft report indicated that a direct cost per test Item No. 11503 was \$29.23. The new fee (a gues-

## President's Address (cont...)

timate of approximately \$50-60) will include the Pricewaterhouse Coopers' costs plus consultation, reporting and medical professional values.

This is a serious issue and will have a significant impact on the viability of Respiratory Laboratories. The TSANZ Professional Standards subcommittee and Fees Subcommittee are continuing to discuss this issue with the relevant bodies. One such proposal may be the unbundling of Item 11503. The ANZSRS Executive is now actively working with TSANZ to prepare another submission to the HIC by the end of the year, we will meet with Professor Iven Young in October to discuss these matters.

It is not difficult to become frustrated and angry at the low value placed on our profession for the work we do. The professional development and improvement of the quality of the tests we perform is not considered in the accounting methods used by organisations who can make or break the viability of our workplaces.

We should be careful not to overreact to what is a serious concern for our profession. Careful analysis and the presentation of a co-ordinated and very detailed counter argument will be critical to achieving a sensible outcome. The Executive would appreciate comments / information from any interested members that will assist in the development of this argument and will keep you informed of any developments / progress. I would like to acknowledge Geoff Foote for his help with this issue and his assistance in preparing this information. Paul Guy who is representing the interests of ANZSRS on the TSANZ Professional Standards subcommittee will keep the Executive informed and I will be in regular contact with the appropriate authorities involved in all subsequent submissions.

### Infection Control Issues

The Society was contacted regarding public submissions for infection control issues in respiratory laboratories. The detailed statement in the NH&MRC draft document was circulated to all Regional Board members and appeared on the notice board of the Society's web site. Thank you to all the members who took the opportunity to make their views known, we appreciated your input. The ANZSRS statement is the result

of various facts, opinions and views put forward on this topic within the timeframe. The submission is included in this issue.

### Society Logo

We are disappointed not to have received any feedback from members regarding the development of a new Society Logo. Several members indicated at the AGM that they had suggestions to put forward. We welcome and need input.

### Election of Regional Board Members

It is time to consider electing Regional Board members, please let the Executive know who the incoming board members are by 31 December 2000. If you have not served on the Board before, consider putting your name forward. It is worthwhile to be involved with shaping the future of the Society and also healthy for the Society to have 'new blood' offering their expertise and opinions. The success of ANZSRS is entirely due to its membership, particularly the many members who unselfishly give of their time despite very full workloads within their laboratories.

*Kind regards,  
Maureen Swanney, CRFS*

## Abstracts for 2001 ASM!

Next years Annual Scientific Meeting will be held in Brisbane, *March 16 to March 18, 2001.*

Closing date for abstracts is December 15. For further information check the webpage or contact Annette Dent, Respiratory Lab, The Prince Charles Hospital:

Email: [denta@health.qld.gov.au](mailto:denta@health.qld.gov.au)

## From The

# *editor*

From the Editor

Thankyou to those who generously took the time to provide data for the BC survey, results of which are published in this issue. I have no doubt there are many more questions that could be asked and analyses that could be performed, however, I would like to think there are more than 13 laboratories throughout Australia and New Zealand who would participate in any long term project of this nature. For those who did submit data, I hope you find the analysis both interesting and helpful in improving the quality of results coming from your laboratory.

Some of you will already be aware that I have returned to university and am no longer working at PAH. The decision was a difficult one - (yes I know we have lots of holidays , but bear in mind, generally no money to do anything during them!), with many factors to consider, not in the least my responsibility to Mouthpiece. I am pleased that I have been given the opportunity to continue with Mouthpiece until the AGM next year, at which point another budding Editor will take over the helm. Now is probably a good time to give some consideration to nominations for the position.

Thankyou to those who have contributed to this issue of Mouthpiece. I can appreciate it is extra on top of your al-

ready busy schedules. I know all too well the commitment involved and appreciate the time and effort put in to the articles, all of which, I might add, are of a very high standard making my task that much easier.

We have managed to publish our second CC segment with the enormous help of Maureen Swanney and her persistent encouragement of Dr Lutz. Thank you Maureen for your absolute dedication! Generating enthusiasm for contributions to this segment is difficult and I would not like to guarantee its long term prospects however we will try our best. Feel free to nominate anyone whom you think would welcome the opportunity to and benefit from the experience of writing a clinical contact segment. (One can only hope!)

I trust everyone enjoyed the photos in the last edition as much as I enjoyed preparing them. Unfortunately, our Executive were not thrilled on having their faces staring at them from the pages of Mouthpiece so it seems Peter has the sole responsibility of visual stimulus for this edition. Congratulations Peter!

Until December...

## Postgraduate and Undergraduate Courses in Respiratory Science

Applications are now being called for the Postgraduate Courses in Respiratory Science and in Asthma Education by Distance Education at Charles Sturt University. CSU has also introduced a Bachelor of Medical Science (Respiratory Science) strand as part of the undergraduate program.

**CHARLES STURT**  
**UNIVERSITY**



### Application Forms:

Admissions Office  
Charles Sturt University  
Locked Bag 676  
WAGGA WAGGA NSW 2678

Ph: (02) 6933 2121  
Fax (02) 6933 2063  
Email: [admissions@csu.edu.au](mailto:admissions@csu.edu.au)

### Further information:

Dr Bruce Graham  
School of Biomedical Sciences  
Charles Sturt University  
Locked Bag 588  
WAGGA WAGGA NSW 2678

Ph: (02) 6933 2958  
Fax: (02) 6933 2587  
Email: [bgraham@csu.edu.au](mailto:bgraham@csu.edu.au)

## Letter to the Editor: Oxygen and Bleomycin—What's all the fuss about?

**E**arlier this year, concerns were raised over the use of oxygen during nitrogen (N<sub>2</sub>) washout tests on patients undergoing chemotherapy using Bleomycin (BCNU). Labs were cautioned against using the N<sub>2</sub> washout tests in these patients, but what was all the fuss about? (Or does anyone remember the incident?).

BCNU is used in the treatment of Hodgkins Lymphoma, non-Hodgkins Lymphoma and various other squamous cell carcinomas. It is classified as an antitumour antibiotic - 'Antitumour' because it attacks tumours and 'antibiotic' because it is cultured from the fungus *Streptomyces verticillus*.

The action of BCNU is to produce single and double stranded breaks in DNA helix with the intention of destroying Ca cells. Unfortunately this treatment often destroys healthy cells in the process. Delineation of the helix causes electrons to be released, which are picked up by O<sub>2</sub> molecules to form superoxides and hydroxyl radicals. These radicals further attack the DNA strands causing more havoc within the cell. The more oxygen, the more radicals are formed and the more cellular destruction occurs. Obviously, an undesirable scenario in a patient already struggling with cancer.

As most of us know, N<sub>2</sub> washout test involves subjects rebreathing a 100% oxygen supply for between 4 to 7 minutes until the fractional concentration of N<sub>2</sub> being washed out of the lung is <1.5%. It is the use of oxygen in this procedure that caused a "panic" earlier this year.

There are many articles in the literature about BCNU and associated oxygen toxicity, but nothing conclusive, in fact, there are some contradictions. I came up with three major underlying themes in the literature where patients have died after receiving BCNU:

1. They had been administered large doses of

BCNU 2-4 days prior to the operation. Bear in mind operations are a trauma unto themselves.

2. Continuous oxygen was given both during and post operatively. Oxygen alone is known to be toxic.
3. BCNU was not the only drug in the chemotherapy regime. It is often used in conjunction with Cysplatin.

So where does that leave us with regards to oxygen as used in the N<sub>2</sub> washout tests? There is no doubt that BCNU and oxygen are a toxic combination. The question we need to address is, "is a N<sub>2</sub> washout test, where most people with normal airway function washout out in less than 4 mins, a risk?". Perhaps this can be a research project of our young achievers.

Just out of interest, I still do N<sub>2</sub> washout on BCNU patients following these criteria;

1. Their last BCNU dose was at least two weeks prior to the test
2. The requesting oncologist/physician is notified and consent given prior to the test being performed.
3. The patient has normal (or more correctly non-obstructed) airway function so the washout is relatively quick with minimal exposure to oxygen.

*Cecilia Arrigoni  
Respiratory Scientist  
John Flynn Respiratory Laboratory*

### An Invitation ...

Is extended to ANZSRS members to attend the TSANZ Branch Meeting in Auckland, December 1. Guest speaker is Iven Young and the theme is Respiratory Physiology.

# Clinical Contact

## Short of Breath in Hawaii

A sixty-year-old man was referred to the respiratory service for an opinion of the cause of his increasing shortness of breath following an operation for subclavian aneurysm.

This patient had long standing ankylosing spondylitis. He gave a history that his dyspnoea had been getting worse over twelve to eighteen months. He noticed that he is particularly breathless when lying flat. During a holiday to Hawaii to escape the New Zealand winter he noticed he became acutely short of breath while attempting to swim in the sea.

This patient had spirometry, lung volume and diffusion capacity performed. The data are presented below:

<b>Spirometry:</b>	<b>FEV<sub>1</sub>: 2.00 L</b>	<b>(69%)</b>
	<b>FVC: 2.60 L</b>	<b>(65%)</b>
	<b>FEV<sub>1</sub>/FVC:</b>	<b>77%</b>
<b>Static Lung Volume:</b>	<b>TLC: 4.95L</b>	<b>(87%)</b>
	<b>VC: 2.35L</b>	<b>(58%)</b>
	<b>RV: 2.60L</b>	<b>(124%)</b>
<b>Diffusion Capacity:</b>	<b>D<sub>L</sub>CO: 16.5</b>	<b>(74%)</b>
	<b>K<sub>CO</sub>: 4.2</b>	<b>(108%)</b>

### What is the differential diagnosis?

This patient has restrictive spirometry with an increased FEV<sub>1</sub>/FVC ratio and a reduced vital capacity. His static lung volumes are reduced and his diffusing capacity is reduced, however, when corrected for the reduced volume, it is supranormal (108%).

He may suffer from a fibrotic process in the upper lobes secondary to the ankylosing spondylitis. Ankylosing spondylitis can also cause extrathoracic restriction secondary to spinal fusion. Other examples of extra-thoracic restricting lung disease are kyphoscoliosis, severe obesity, diaphragmatic pa-

ralysis, muscular dystrophy and other disorders of respiratory muscle function e.g. Guillain-Barré syndrome. The pulmonary function data obtained suggest an extra thoracic abnormality reducing his lung volumes without affecting his lung parenchyma.

### What other tests could you do?

**Standing spirometry VC: 2.60 L**

**Lying spirometry VC: 1.58 L**

This patient has a significant (1.02 L (39%)) fall in his vital capacity when spirometry is performed lying down. This suggests a diagnosis of diaphragmatic weakness. It fits with the clinical description that the patient became more short of breath when lying supine and also when submerged in water. Submersion in water presses the abdominal content into the chest cavity and can result in acute dyspnoea. In this patient the unilateral diaphragmatic weakness has since been confirmed by diaphragmatic screening. The results of phrenic nerve conduction studies are still outstanding. Although this diagnosis was made following his surgery, it is more likely that the patient had isolated phrenic nerve paralysis prior to the surgery since he gives a clear history that the symptoms preceded the surgical intervention.

Causes of isolated phrenic paralysis: Mediastinal or pulmonary tumors; trauma following thoracic, cardiac or neck surgery. Other potential associations include porphyria, beri-beri, drugs such as isoniazid and vincristine, and poisons such as alcohol, lead, arsenic and mercury. Phrenic paralysis has also been reported in manipulation of the cervical spine.

*Maureen Swanney (Respiratory Scientist),  
Debbie Murray (Respiratory Scientist),  
Dr Lutz Beckert (Respiratory Physician)*

*Respiratory Physiology Laboratory  
Christchurch Hospital*

## Variability in Biological Quality Control Data

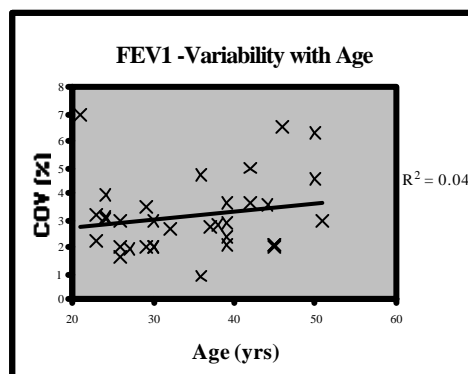
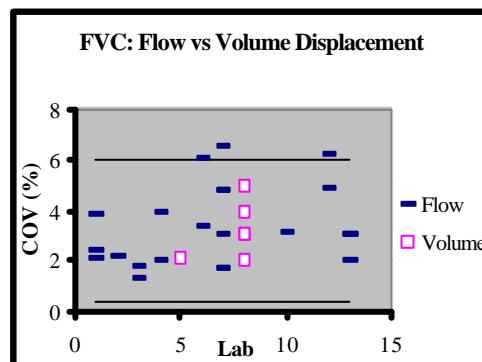
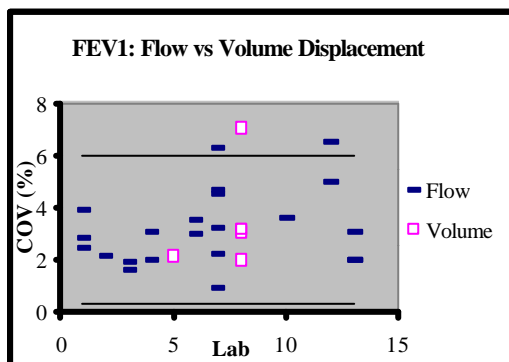
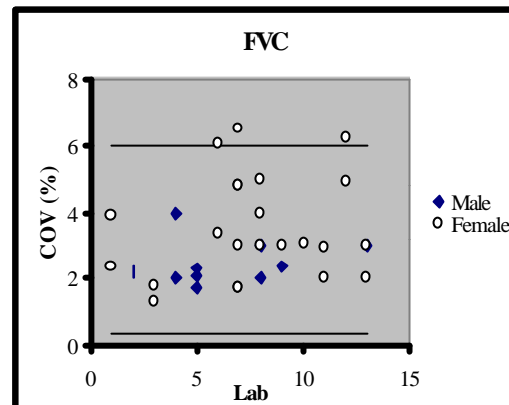
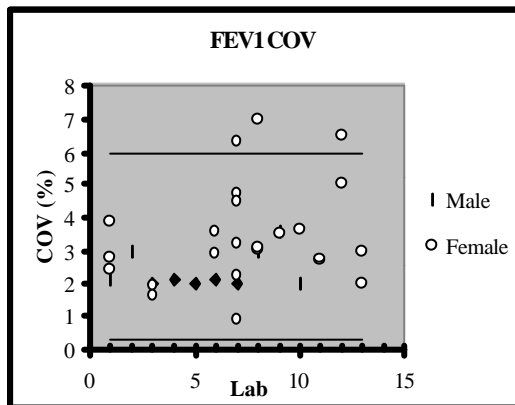
Whilst variability in lung function measurements for healthy, control subjects has been well publicised (see April 2000 Edition), normal variability in BC subjects is lacking.

The ANZSRS “Variability in Biological Control Survey” was an attempt to identify an acceptable variability in trained subjects when performing routine measurements of lung function.

Data were obtained on 30 Biological Control (BC) subjects, in 13 laboratories throughout Australia and New Zealand. Ages ranged from 23-51 years, with 20 of the 30 subjects being female. Graphical results are presented as mean  $\pm$ 2SD.

In brief, female BC subjects showed a greater variability in all observed parameters. The variability in spirometry measurements was independent of the type of instrument used however body plethysmography showed much less variability in the measurement of FRC than gas dilution techniques (N<sub>2</sub> washout, He Dilution).

Bear in mind, this is a brief overview of the data provided by the survey. If anyone would like more specific information regarding their own laboratory, please do not hesitate to contact me.



## Variability in Biological Quality Control Data

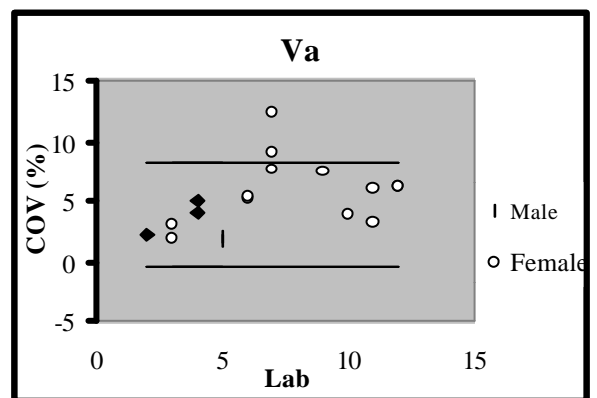
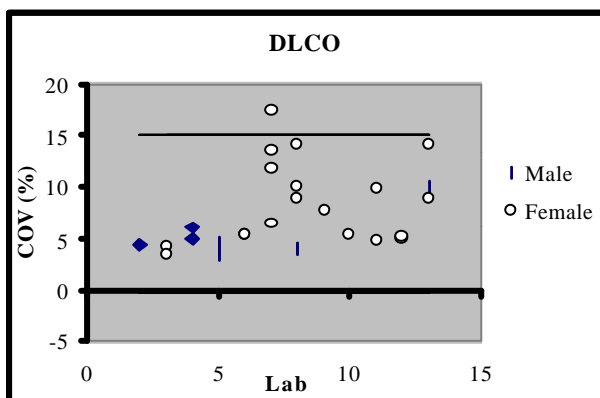
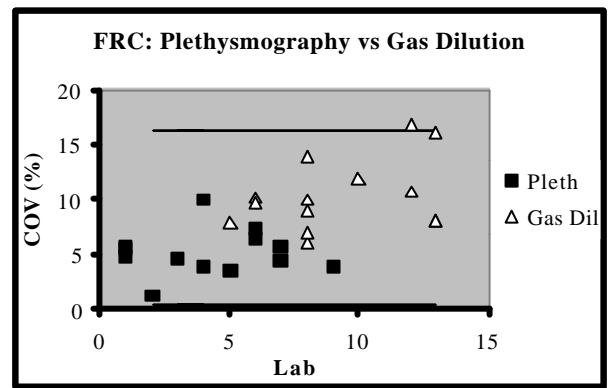
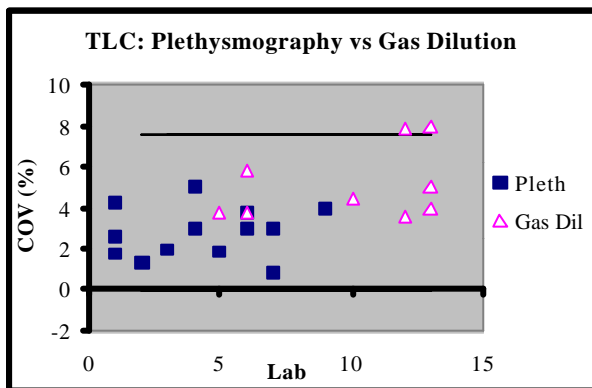
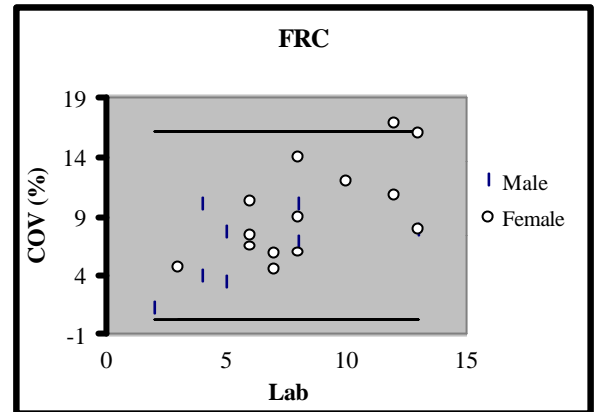
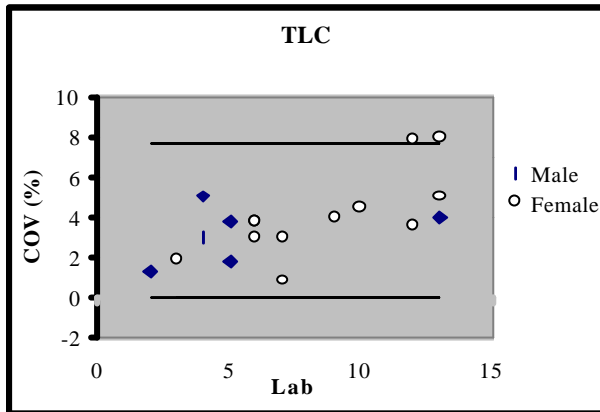


Table 1. Mean values for 4 lung parameters

	COV (%) All	COR (L) All	COV (%) Male	COV (%) Female	COV (%) Volume	COV (%) Flow	COV (%) Gas Dil	COV (%) Pleth
<b>FEV1</b>	3.1	0.22	2.4	3.5	3.4	3.2	*	*
<b>FVC</b>	3.2	6.94	2.5	3.5	3.2	3.4	*	*
<b>DLCO</b>	7.5	*	5.2	8.5	*	*	*	*
<b>FRC</b>	8.3	0.67	6.5	9.4	*	*	10.5	5.2

## ANZSRS Public Submission: Infection Control in the Respiratory Laboratory

The Communicable Diseases Network of Australia and New Zealand (CDNANZ) released a draft of *Infection Control in the Health Care Setting – Guidelines for the Prevention of Transmission of Infectious Diseases* for public consultation.

The section of this document referring to Respiratory Function Laboratories was posted on our web site and circulated to all Board members for distribution within each branch of the Society. Our consultation with the membership provided

a variety of views, facts and opinions. Thank you to all members who contributed. We developed the following consensus view, balancing practicality, idealism and cost effectiveness.

Maureen Swanney  
President



### 19.5.4 Respiratory function laboratories

Barrier filters are single use items and should be used to protect all equipment that may be contaminated with patient expirates unless the equipment is disinfected or replaced between patients. There is evidence that the use of barrier filters will reduce the risk of cross infection and that the use of filters is cost effective (Side et al 1999). It is important to be aware that filters do not preclude the need for cleaning. Mouthpieces, nose clips, tubing and other equipment on the patient side of a filter should be replaced with clean components between patients.

When choosing barrier filters it is important to verify the resistance and efficacy of filtration at flow rates at least up to 14 L/sec. The resistance of the breathing circuit including the filter should be  $< 2.5 \text{ cmH}_2\text{O/L/sec}$  at flow rates up to 14 L/sec (ATS standard). The filter of choice should have a low effective deadspace (50 ml).

In respiratory function laboratories, items deemed to be semicritical include reusable mouthpieces, reusable nose clips, one way breathing valves, pneumotachograph screens, turbine assemblies, mouth shutters and specialised nebulisers used for bronchial challenge tests. These items must be disassembled, and thoroughly cleaned and disinfected. Gloves should be worn when handling saliva contaminated equipment. In addition all items must be cleaned according to manufacturers instructions because heat, chemicals and gases may damage some equipment. After cleaning and disinfection it is essential that all items are

rinsed thoroughly with tap water and air dried before use. Clean equipment should be stored in covered containers.

Equipment distal to a barrier filter or one way breathing valves should be cleaned at least once daily to remove particulate matter and moisture (Crockett and Grimmond 1993).

The outside surface of tubing that is in direct contact with patients should be cleaned with a bactericidal agent between patients.

The environment of the laboratory should be maintained by regular cleaning with detergent and be kept dust free.

Routine hand washing should be performed before and after each patient contact.

Items labelled as 'single patient use' including peak flow meters and nebulisers used for bronchodilators and oesophageal balloons should not be recycled.

The effectiveness of infection control procedures can be independently verified by culturing swabs taken from respiratory equipment (internal surfaces of spirometers and the proximal side of flow spirometers). While some laboratories do this regularly it is sufficient to carry out random spot checks.

# The dose-response curve in bronchial provocation tests

**CHARLES STURT**  
UNIVERSITY



## Introduction

A bronchial provocation test is a typical method used to help confirm the diagnosis of asthma or to assess the effectiveness of an intervention (eg use of an asthma preventer medication). The test involves assessing the severity of the response of the bronchial airways to provoking stimuli. There is a wide range of provoking stimuli used including: inhalation of pharmacological agents (histamine, methacholine, carbachol), inhalation of non-isotonic media including nebulised hypotonic- or hypertonic-saline solution or hygroscopic powder (eg mannitol), eucapnic hyperventilation using cold and/or dry air, physical (aerobic) exercise, inhalation of specific allergens or occupational sensitisers.

The following points generally apply to these provocation tests.

1. There is the potential for severe bronchoconstriction in any of these tests so a recognised protocol should be followed and appropriate resuscitation equipment and bronchodilator (MDI) should be immediately available. The subject should be asymptomatic and non-medicated at the time of the test.
2. The histamine and methacholine challenges are the most extensively validated and are thereby the challenge of first choice in adults, whereas in paediatrics, exercise tests may be a better alternative. In certain cases, use of occupational stimuli (eg hypertonic saline for SCUBA divers) may be more specific and appropriate.

## Determining a positive response

Most test protocols have the common aim of determining a dose-response curve to the challenge stimulus. Those achieving the criterion

response for the specific test, namely a significant fall in the specified lung function parameter, are classified as hyper-responsive.

The Forced Expiratory Volume in one second ( $FEV_{1.0}$ ) is the lung function index of first choice in clinical practice to monitor bronchial responsiveness (airway narrowing). The  $FEV_{1.0}$  is usually expressed as a % fall from baseline value rather than the absolute  $FEV_{1.0}$  (litres) or Forced Expiratory Ratio ( $FEV_{1.0}\%FVC$ ). Sometimes the fall is expressed from the post-diluent value for the pharmacological methods because there may be a slight reduction in the  $FEV_{1.0}$  in response to the control (diluent) compared to the pre-test baseline value.

The response is then determined as a drop in  $FEV_{1.0}$  and the dose or concentration required to reach a criterion value of say 20%, is then expressed as a provoking dose ( $PD_{20}$ ) or concentration ( $PC_{20}$ ) respectively. Usually this dose must be interpolated from the last two doses administered and is more correctly calculated assuming a logarithmic (exponential) dose-response relationship.

The following criteria are commonly used for determining the degree of responsiveness with the pharmacological methods although the criteria are somewhat arbitrary (based on several sources). (See table over page).

	4.5% Saline	Histamine (and Methacholine)		
	PD <sub>20</sub>	PD <sub>20</sub>	CIU	PC <sub>20</sub>
Severe (Marked)	<2 mL	≤0.2 mg	≤10	≤0.1 μmolar
Moderate	2.1 - 6.0 mL	>0.2 - 1.0	>10 - 50	>0.1 - 0.8 μmolar
Mild	6.0 - 20.0 mL	>1.0 - 5.0	>50 - 250	>0.8 - 3.2 μmolar
Insignificant (Slight)		>5.0	>250	>3.2 - 7.8 μmolar

CIU is cumulative inhalation dose units where one IU is one breath (0.02mL) of 1.0mg/mL solution (i.e. 0.02mg).

Alternatively, simply achieving a 20% reduction in FEV<sub>1.0</sub> is consistent with the diagnosis of asthma (although a negative response does not preclude asthma).

Responsiveness to low concentrations of challenge stimuli denotes a hyper-responsive airway. However, there are three terms namely, hyper-responsivity, hyper-sensitivity and hyper-reactivity which are associated with the response. These terms have been derived from enzyme kinetic studies and log dose - linear response curves common to pharmacological studies of drug action. However, for challenge tests, the log dose-linear response graph is more likely shown with the response still expressed as a percentage drop in FEV<sub>1.0</sub> but as a downward deflection from the baseline (as on the SensorMedics system). This effectively inverts the appearance of the typical dose-response graph to appear as in Figure 1. The term **hypersensitivity** specifically refers to a “leftward” shift in the dose-response curve so that some effect can be seen even at low doses. **Hyper-reactivity** refers to a greater slope of the rectilinear phase of the dose-response curve (ie an increased **reactivity index**) which indicates a more rapid deterioration in lung function for a given increase in dose. In this respect, **hyper-responsivity**, which indicates a significant response at a given dose (or a lower dose to produce a given criterion response), could be attributable to either hypersensitivity or to hyper-reactivity or both. Therefore, the more generic term, hyper-responsive, is most frequently used.

To assess the effectiveness of an intervention (eg asthma preventer medication) the values for PD<sub>20</sub> can be compared using log transformation or by determining the reactivity index.

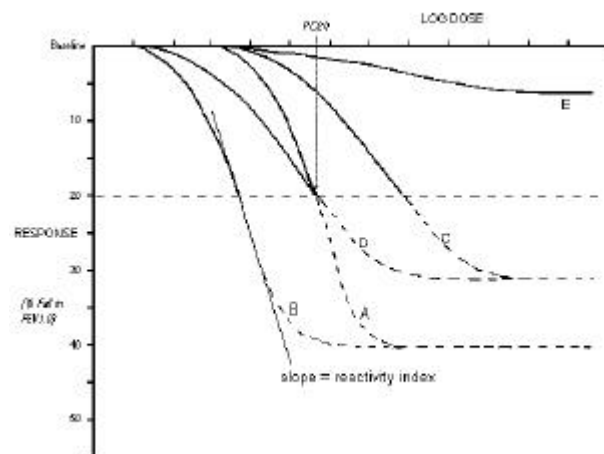


Figure 1. A family of hypothetical log dose-response curves for pharmacological or saline challenges. The data is expressed in the more usual manner as a % fall in FEV<sub>1.0</sub> from baseline, with the criterion response of a 20% fall again indicated by the dashed horizontal line and the PD<sub>20</sub> shown for subjects A and D by the vertical arrow. Subjects A and B show hyperresponsivity with similar reactivity index (slope) but different sensitivity (dose level for onset of response) which is also reflected in the different PD<sub>20</sub> values. Subjects C and D show hyperresponsivity but with reduced reactivity compared to A and B respectively. Subjects A and D have the same PD<sub>20</sub> but have different sensitivity and different reactivity. Note that if the criterion was the PD<sub>15</sub>, subject D would be classified as more responsive than subject A. For subject E, because the reactivity (slope) is so low, the response does not reach the criterion measure of a 20% reduction in FEV<sub>1.0</sub> despite having a similar sensitivity to A and C. Values above the 20% fall in FEV<sub>1.0</sub> are shown with dotted lines as the test may be terminated prior to reaching the plateau levels shown (for subjects A, B, C and D).

An alternative, but possibly more useful means of displaying the data is as a double reciprocal (Lineweaver-Burk) plot, which plots against . (Figure 2). This form of plot can provide the same data as the log dose-response curve without having to administer the high doses necessary to reach maximum response (assuming the response truly does follow the theoretical rectangular hyperbola shown in the log dose-linear response curves in Figure 1).

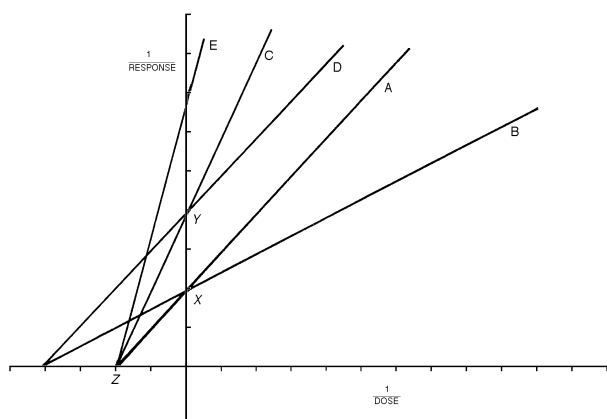


Figure 2. A double reciprocal (Lineweaver-Burk) plot of the same data from Figure 1. Note that the subjects can be classified as hyperresponsive based on the slope of the line, with a lower slope indicating hyperresponsivity. These results parallel those for the  $PD_{20}$  with subject B showing the greatest responsiveness, subjects A and D similar responsiveness whilst subject C is less responsive. The slope for subject E indicates a lack of responsiveness. The value X indicates the same maximum response for subjects A and B while Y indicates a lesser maximum response for subjects C and D. These maximum response values can be extrapolated from data obtained prior to termination of the test without having to reach the plateau stage. Point Z indicates an equal sensitivity for subjects A, C and E (whilst B and D share a greater sensitivity).

Whilst the conversion of raw data and plotting of double-reciprocal plots is an arduous task manually, it should be simple to incorporate into the latest generation of software driven pulmonary function equipment. Similar reciprocal plots may be useful in analysis of the volume-time spirogram for assessing the rate of decrease in airflow as an indicator of obstruction. However, that discussion is best left for another day.

Dr Bruce Graham  
School of Biomedical Sciences

## Bibliography

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## Profiler

# Peter Rogers

It's hard to think about Peter Rogers, a member of our Society soon after its inception, without a smile on your face. Most members, who know Peter, will be familiar with his accommodating nature and sense of humour. Many of you, however will not be privileged, as I have been, to work with him for several years.

Peter, one of eight children, grew up on the northern N.S.W coastal town of Lismore. He loved surfing, playing football and riding anything on two wheels. Whilst boarding at Woodlawn College, Peter developed an interest in science with the help of National Geographics, and on graduating, opted to study science at Sydney University where he majored in histology and physiology.

To help support himself at University, Peter drove tractors and ploughs during the holidays and coached maths during term. Later, he tutored in physiology and anatomy at both Randwick and Meadowbank Technical Colleges. Most of Peter's knowledge of anatomy came not through study but from first-hand experience! Sporting mishaps have been responsible for three broken wrists, numerous collar bone and rib fractures, and injuries to his knees, ankles and back. We always looked forward to Peter's return from holiday with some trepidation, wondering if he would hobble in on crutches or with his arm in a sling!

As an undergraduate Peter reveled in the physiology laboratory of David Read, a dominant force in respiratory physiology in Australia. Peter was inspired to apply for a position as a physiologist in the Cardiothoracic theatres at St Vincent's Hospital, Sydney. He arrived for his interview wearing a leather jacket and bike helmet, and the staid interviewer was unsure how serious Peter was regarding the position. Fortunately, Peter was employed and stayed at St Vincent's for the next 18 years.

Peter has never mastered the art of saying "no", and therefore is always juggling many projects simultaneously. Whilst at St Vincent's, he was part of the early heart-lung transplant team involved in blood gas analysis and haemodynamic monitoring during surgery, and lung function analysis both pre and post-operatively. Peter and his colleague, Renee Bittoun, were involved with the anti-smoking lobby (The Sham Campaign). Many of you will remember their entry in the Philip Morris competition looking for a new "Marlborough man"- a poster of a respiratory cripple with a trachea tube, sitting in a wheel-chair holding a cigarette.

When Renee left the unit to concentrate on her smoking cessation clinic, Peter became a full-time Scientific Officer in an increasingly busy laboratory. Apart from his clinical duties he participated in many drug trials and

other research projects. He helped devise a nitric oxide mixing and delivery system for treating pulmonary hypertension in patients undergoing heart and lung surgery. These delivery systems are now frequently used in many parts of the hospital including ICU, cardiac catheter lab and operating theatres. In 1995 this project became the subject of his Master's thesis in Clinical Measurement at the University of Technology, Sydney.

After completing the polysomnography course at Royal Prince Alfred Hospital, Peter set up a sleep lab in the hospital and was initially responsible for scoring, training and management of its staff. Often Peter would arrive at the respiratory lab bleary-eyed and disheveled. We were never sure if he'd been up all night in theatres (where he was on-call), been working in the sleep lab or just had a heavy night out! Either way, after a few drops of Visine and some freshly brewed coffee, he was ready to start the day.

After 18 years at St Vincent's, Peter took up the position of Senior Scientific Officer at Concord Repatriation Hospital managing both the Respiratory Function and Sleep Units.

Over the last few years he has given evidence in court as an expert witness and has also been part of TSANZ accreditation committees for both respiratory function and sleep labs. He is an excellent teacher and has given many lectures and tutorials to staff within the hospital, and to outside organizations. He has also served as a regional board member for our Society for several years. Currently he is one of the physiologists for the Institute of Sports Medicine.

It isn't all work and no play for Peter. He recently acquired a 4-wheel drive, and takes every opportunity to go away with the family. For many years he has gone out west shooting wild pigs, or any other wild things that stray into his path. He is a keen mountain-bike rider and an enthusiastic supporter of his son's soccer team.

So for those of you who don't know him, should you happen to see a guy on a bike, shot-gun slung over his shoulder, with a bandaged leg or an arm in a sling, juggling several jobs at once but still with a big grin on his face - that's Peter Rogers!

*Barbara Karat  
Respiratory Scientist  
St Vincent's Hospital, Sydney*

Australian and New Zealand Society  
of Respiratory Science

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## Education Scholarships

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### ANZSRS Scholarship for Tertiary Study ANZSRS Research Grant

A maximum of two scholarships valued at \$2000 or 50% of tuition, costs whichever is the lesser, will be awarded per year.

ANZSRS study grants has been established to support the professional development of the members of the Society. The grant towards Tertiary study tuition costs was designed to support members completing the Graduate Certificate / Diploma or Masters of Respiratory Science at Charles Sturt University. Other courses will be considered if deemed to be relevant by the Executive. Applicants must have been members of the Society for at least 2 years, be accepted for the course concerned, hold a full time position in and have received less than 50% of tuition costs from their employing institution.

The Research Grant is designed to foster the development of academic excellence amongst members who may not have alternative means of support. The grants will be awarded for projects that will lead towards improved application of Respiratory Science. Applicants must have been members of the Society for 5 years and hold the CRFS credential. Any research project must have been approved by the Head of the Department in which it will be completed and by the local Ethics committee, and the requested funds must not include any salary costs. It is expected that progress reports will be submitted to the Board and a presentation made at the Annual Scientific Meeting of the Society following completion of the project.

Applications must reach the Secretary by 30 November of the year prior to study / award. The outcome of the application will be advised by the end of January. Application forms in Acrobat Reader format are available on the ANZSRS website at

<http://www.anzsrs.org.au/scholarshipsgrants.pdf>

and should be forwarded to:

**Dr Kevin Gain**  
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New Zealand  
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fax: 0015 64 4385 5550  
Kevin.Gain@wnhealth.co.nz

# ANZSRS GRANT APPLICATION FORM

## GRANT APPLIED FOR:

Circle one:

Tertiary Study

Research

Amount requested:

\_\_\_\_\_

Name

Year of Joining Society:

Qualifications held:

When CRFS attained:

Course enrolled for:

Have you previously attempted this course?

Have you previously held an ANZSRS award?

Where are you employed and for how long?

Level of funding provided by Institution:

Reason for applying:

\_\_\_\_\_

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Attachments:

- Letter confirming course acceptance
- Letter from HOD confirming position, salary and any institutional funding offered
- Letter confirming research approval by HOD
- Detailed research proposal
- Letter confirming Ethics committee approval
- CV

I assert that the information provided above is correct and that I will adhere to the conditions of the awards. In the case of a research grant I undertake to table an annual progress report at the Board meetings for the duration of the research project and a full report upon completion of the project.

\_\_\_\_\_ Name

\_\_\_\_\_ Signature

\_\_\_\_\_ Date

# Guidelines for the Submission of Abstracts for ANZSRS Annual Scientific Meeting



These guidelines are designed to clarify the relationships between published work and the submission of abstracts for our Annual Scientific Meeting. There is an “understood” protocol in the scientific community that is not written down. The Executive have written these guidelines in the hope that the members will benefit from having things clearly spelt out and be encouraged to present and publish their work.

## ANZSRS ANNUAL SCIENTIFIC MEETING

- **Membership of ANZSRS**

Membership of ANZSRS is not a prerequisite for the acceptance of an abstract for the ASM (but the awarding of a travel grant is).

- **Abstracts and Publications**

- \* Abstracts for the ASM must be new data not previously published.
- \* “Publication” means the appearance of the data in print. Presentation of the data at the ASM must precede the appearance in print of the same data.
- \* Papers submitted to a journal or accepted by a journal but not actually in print at the time of the ASM may be submitted for presentation at the ASM.

It is rewarding for members to gain experience by presenting their work at multiple meetings and we do not want to either discourage or jeopardise the practice. We just need to be consistent in our approach. Please give the Executive your comments on this issue.

## LOCAL, REGIONAL AND INTERNATIONAL MEETINGS

Presentation of the same data at local, regional and international meetings is acceptable but you must still consider the timing of abstract publication relative to our ASM. Publication of an abstract containing the same data constitutes publication of that data. For example ATS abstracts are published in the *American Journal of Respiratory and Critical Care Medicine* and TSANZ abstracts are now published in *Respirology*.

- \* **Local:** ANZSRS & TSANZ Branch meetings
- \* **Regional:** ANZSRS & TSANZ Annual Scientific Meetings.
- \* **International:** ATS, BTS & ERS meetings

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## CRFS Examination

Congratulations to *Jacqueline Gehring* who recently passed the CRFS examination. Best of luck for all those candidates who are about to sit the next exam on **November 24, 2000.**

For details of the examination and application forms, please contact:

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You are invited to contribute short articles, meeting reports and calendar details etc. These should be sent to:

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