

deaf access

FARM SAFETY



HEARING

deaf access

...supports rural and regional communities in Victoria to develop strategies that enable deaf and hard of hearing people be more included in their local community.

deaf access



- Assist community organisations and services to work more effectively with deaf and hard of hearing people.
- Raise awareness in the local community about the issues and needs of deaf and hard of hearing people
- Provide information relating to deafness or hearing loss to: deaf and hard of hearing people; their families or carers; services that work with deaf and hard of hearing people; and to the general community.

Reasons for hearing loss



37% Noise

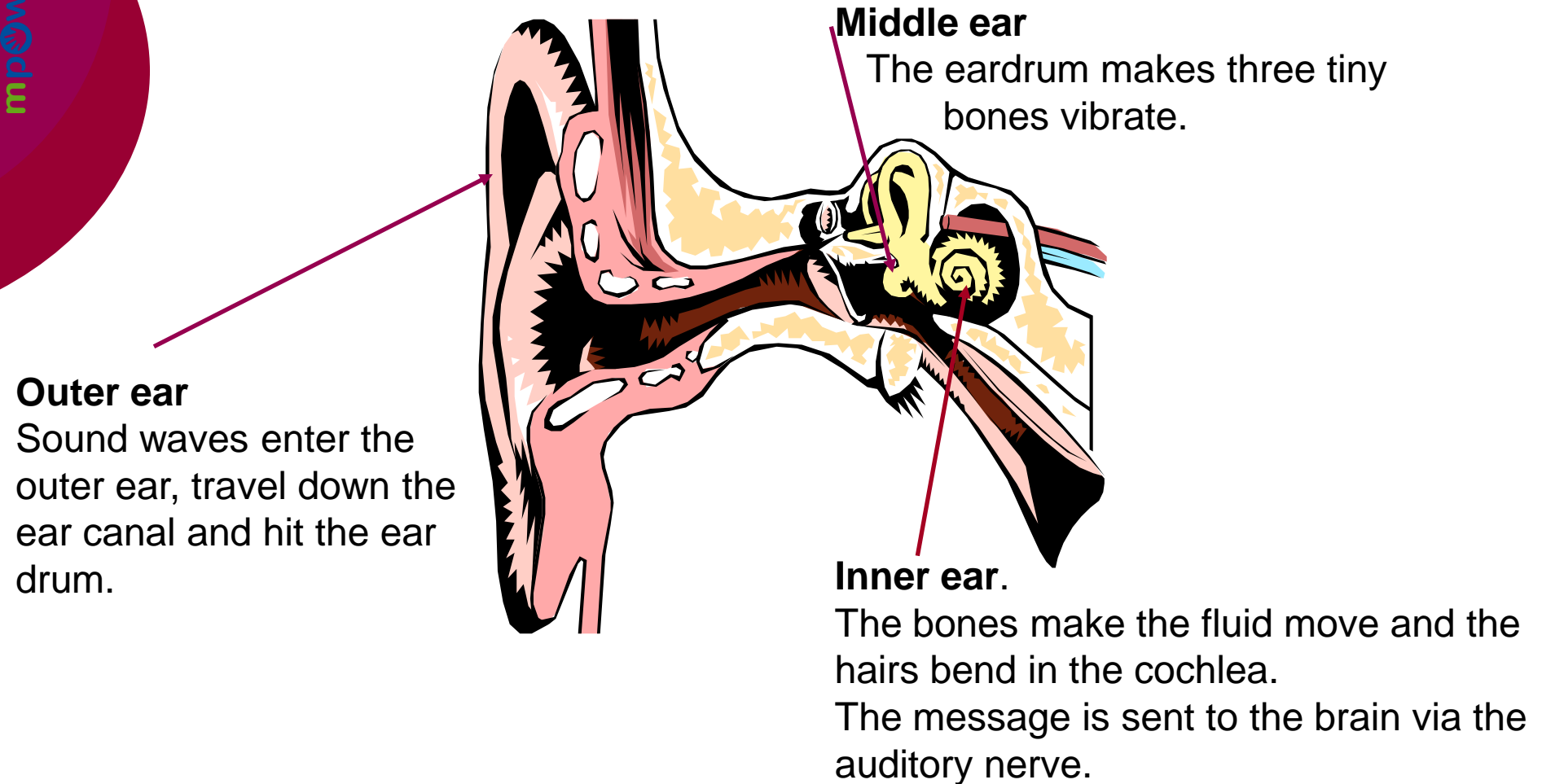
28% aging.

17% infection

4.5% born with hearing loss or deafness

13% other accidents etc

The ear & how it works



How does noise destroy hearing?

Sounds enter the ear and travel to the cochlear where about 30,000 tiny hair cells receive and transmit them to the brain where they are interpreted.

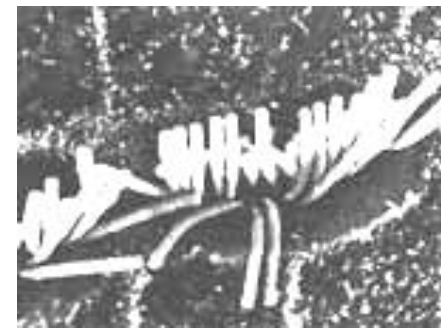
Exposure to noise results in destruction of these hair cells.

The damage is painless and usually not noticed until a significant number are destroyed.

They are not replaced.



Before



After

The logo for 'mpower' is located in the top left corner. It features the word 'mpower' in a stylized font, with 'm' in green, 'p' in blue, 'o' in blue, 'w' in blue, 'e' in blue, and 'r' in blue. A small 'inc.' is written in a smaller font above the 'r'. The logo is partially obscured by a red circular graphic.


Hearing loss in adults undertaking farm work

Hearing screening of 6000+ farmers through agricultural field days in NSW show:

- Around 66% had a measurable hearing loss compared to 22-27% of the general population
- Around 66% have trouble hearing with background noise
- Around 25-33% have trouble hearing on the phone
- Left ears more often affected
- Around 50% reported tinnitus
- Commences in early adulthood

Hearing Screening Programs
ACAHS, HNEAHS 1994-2008)

Why farmers more than the general population?



SA 'Farm Noise and Hearing Project' shows almost 56 per cent of farmers are likely to suffer premature hearing loss through occupational noise exposure from equipment such as chainsaws, tractors, tools, piggeries and shotguns. The study found the degree of hearing loss in farmers aged in their 50s is the same as city people aged in their 70s.

"The results illustrated a clear link between regular tractor, machinery and equipment maintenance programs, and the purchase of quieter plant and machinery, and the degree of hearing loss experienced by farmers. We also found that those farmers who are likely to wear wearing personal hearing protection when operating chainsaws, workshop tools or firearms suffer from lower levels of hearing loss than other farmers."

Links between Noise, Hearing Protection and Hearing Loss among NSW Farmers Geoff Kaine and Jean Sandall [Commonwealth Department of Primary Industries and Energy](#)

The Australian Centre for Agricultural Health and Safety in conjunction with Hunter New England Area Health Service have recently published a new report looking at the health of Australian farmers' hearing.

Greater measurable hearing loss in 'middle age' farmers exposed to chainsaws, heavy machinery and cabined tractors, compared to unexposed groups.

- **Greater measurable hearing loss in 'younger farmers' who never use personal hearing protection with firearms and un-cabined tractors, compared to those who always use hearing protection.**

"Study that found only 47 percent of male farmers and 18 percent of female farmers used hearing protection while working."

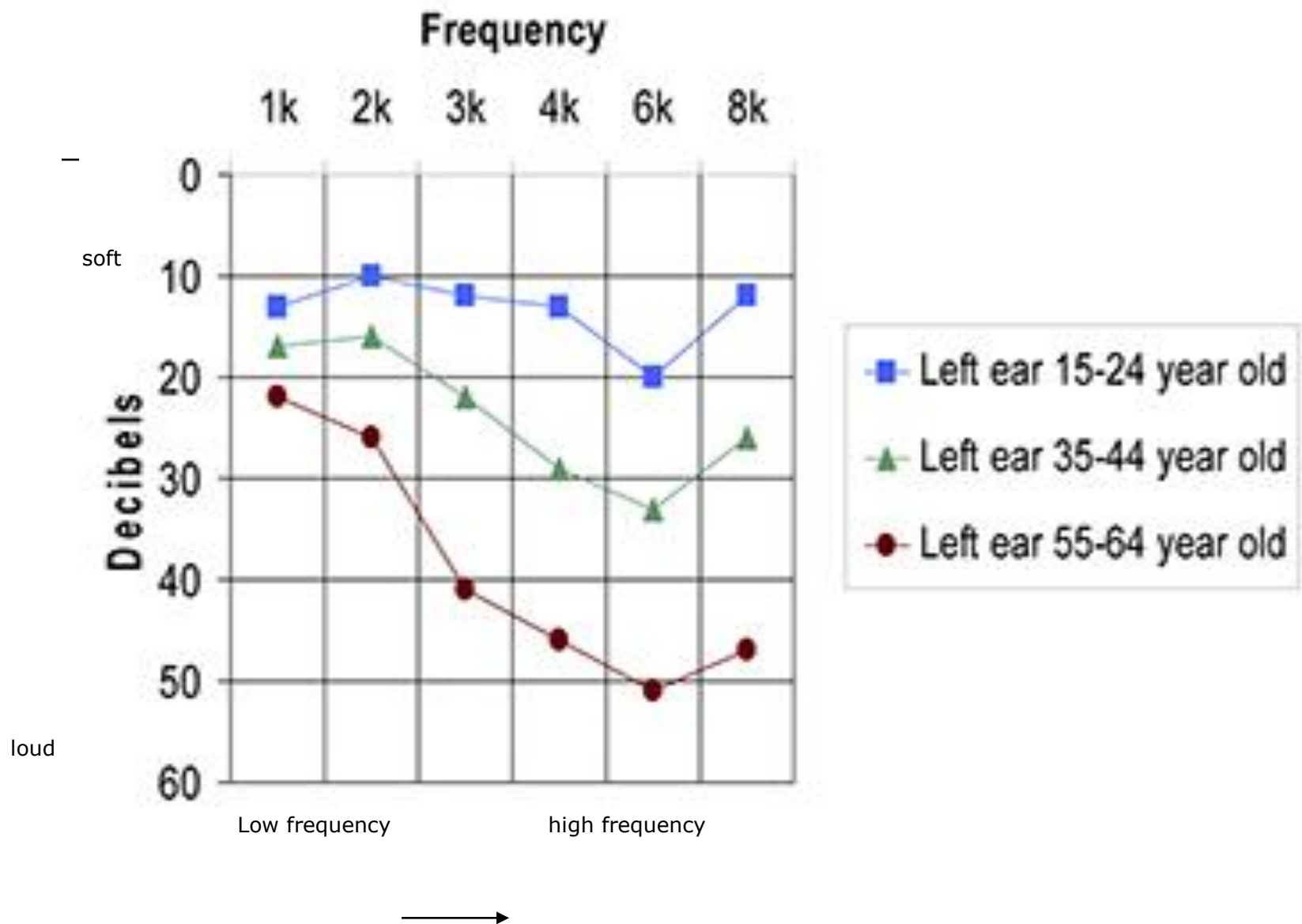
Links between Noise, Hearing Protection and Hearing Loss among NSW Farmers

Geoff Kaine and Jean Sandall [Commonwealth Department of Primary Industries and Energy](#)

A recent study at Northern Illinois University found that in farm communities 92% of males and 66% of females have lost some level of hearing.

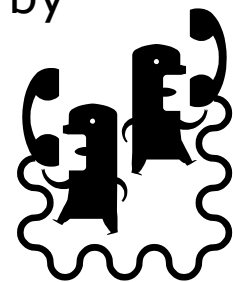
Agricultural workers are a high risk group where hearing loss is concerned. Over 25% experience hearing loss by age 30 and over 60% by age 50.

Studies have shown farmers are at increased risk of noise-induced hearing loss, with as many as 92% of farmers in one study having significant hearing loss; Farm and Ranch Safety and Health Association, Canada



The warning signs of hearing loss include:

- Noise initially destroys the hair cells which describe the soft sounds of speech to the brain, such as t, f, v, s, sh, ch, p.
- This results in a person being able to hear, but not always understand what is being said.
- In background noise, such as machinery/motors running, social gatherings or when the television is on hearing and understanding becomes difficult.
- Raising your voice when talking to somebody about one metre away.
- Tinnitus (noises in the head or ears) can also be caused by exposure to loud noise.
- Sounds seem dull after stopping noisy work.
- Ringing in the ears lasting up to several hours after stopping work.
- Regularly asking people to repeat what they say.
- Difficulty hearing in group discussions or on the telephone.
- Frequently turning up the volume on the radio or television.



What is the effect of hearing loss?

SAFETY:

- People calling out warnings
- Sounds associated with faulty equipment or straining engines
- Alarms

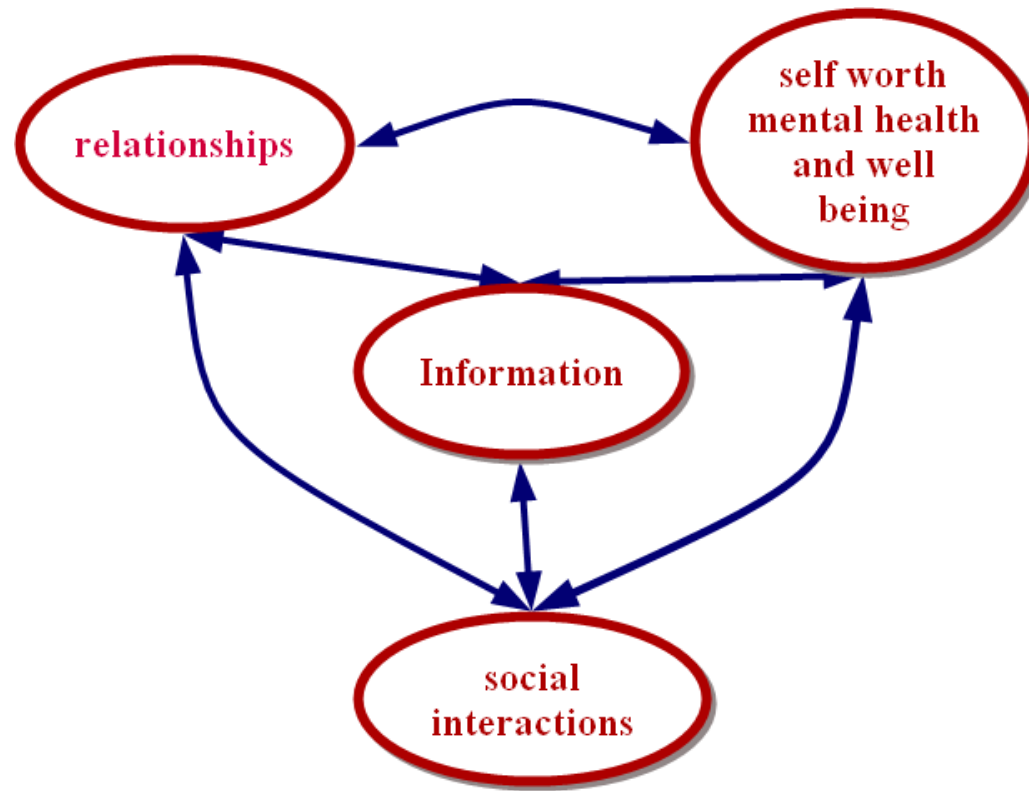
- University of Iowa research found that farmers with difficulty hearing regular conversations were 80 percent more likely to be injured on the job.
- A new study reveals that not only are farmers already at a higher risk for hearing loss, but those with hearing aids have more work-related injuries.



Social and emotional wellbeing

Lack of hearing and receiving information leads to

- problems with and decreased social interactions
- poor feelings of self
- lack of independence and increasing reliance on others

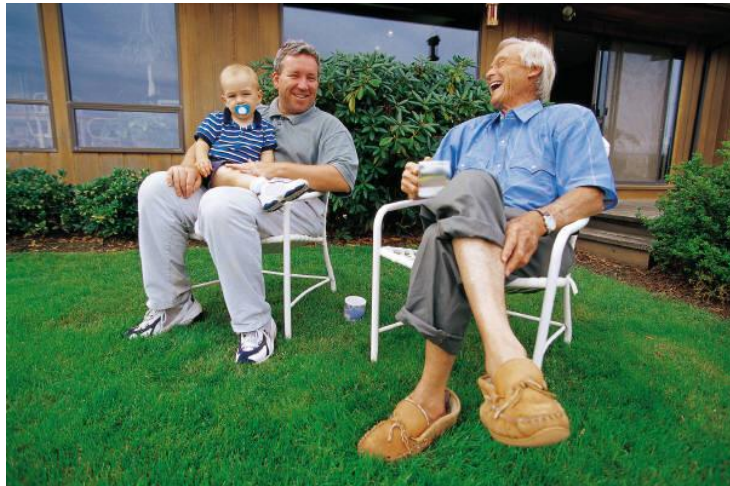


Effects of hearing loss



Receiving
information

Relationships



Social
interactions



Feelings about self

Potential psychological problems that have been reported as arising, directly or indirectly, from hearing loss of all types and degrees:

- Social withdrawal, isolation,
- Insecurity,
- Distrust,
- Lowered self-esteem,
- Denial and disbelief
- Lethargy, resignation, passivity
- Inferiority complex
- Stress, anxiety
- Paranoia
- Depression,
- Cognitive dysfunction
- Social inappropriate behaviour
- Defensiveness
- Anger
- Frustration
- Bitterness, resentment.
- Stress, anxiety
- Superiority complex
- Aggressiveness
- Emotionally driven hypertension
- Substance and familial abuse

Lack of communication, social and community participation leads to decreased positive physical and mental health.

Individual protective factors for positive mental health, include positive self-esteem, emotional resilience, positive thinking, problem-solving and social skills, social integration, participation, network of friends, stress management skills and feelings of mastery

These individual protective factors can be poor when the person has a hearing loss especially when they have not recognised their hearing loss.

Issues for rural hard of hearing

- **Lack of hearing loss prevention education**
- Traditional work practices
- Lack of services for screening and assessment
- Lack of access to audiometric advice, choice of hearing aids
- Wimmera Hearing Inc found that from 382 farmers screened with hearing loss, 310 of them did not have a pension and did not qualify for eligibility for Government subsidy. This means that they would personally need to pay for hearing aids or assistive equipment.
- Geographical isolation compounds social isolation.
- Family businesses can compound stresses on relationships

The logo for 'mpower' is located in the top-left corner of the slide. It consists of the word 'mpower' in a lowercase, sans-serif font. The 'm' and 'p' are green, while 'ower' is white. The text is positioned over a dark red circular background that is partially visible on the left edge of the slide.

Hearing screening/check

Noise-induced hearing loss usually develops slowly over several years so you do not realise there is a problem until it is too late.

It is best practice and in farmers interest to have hearing screened regularly to detect early signs of noise injury. This can alert you to prevent further damage as well as help to manage any existing hearing loss.

Screening available locally through

- Australian Hearing.
- Wimmera Hearing Society.
- Private audiologists
- Better Hearing Victoria

References:

- Dept of Employment & Industrial relations, QLD

http://www.deir.qld.gov.au/pdf/whs/rural_factsheets/rural_factsheet_03.pdf

- Australian Centre for Agricultural Health & Safety (ACAHS)



Activities that put farmers at risk of hearing loss

Levels dB	Farming machinery or operation	Maximum time
80	Tractor idling	No limit
85	Working in a tractor with an enclosed cab	8 hours
90	Shearing shed	2 hours 30 minutes
90	Chainsaw idling	2 hours 30 minutes
95	Angle grinder	48 minutes
95	Grain auger	48 minutes
95	Header	48 minutes
100	Tractor operating under load without a cab	15 minutes
100	Orchard sprayer	15 minutes
105	Pig shed at feeding time	4 ½ minutes
120	Chainsaw cutting	8 seconds
140	Aircraft at 15m	No safe exposure
140dB	Shotguns/rifles and other firearms far exceed the 140dB limit	No safe limit: <i>Instantaneous damage</i>

**Table: Average noise levels and recommended exposure limits
for common farm machinery / activities (on 48 Australian farms)**

Typical operating conditions / position of worker	Noise Level at the ear Average (& Range) L Aeq dB(A)	Recommended limit of exposure without the use of hearing protection. NB: Noise exposure risk for each activity in the day is cumulative toward the overall noise exposure risk. * *
Air compressors	86 d B (77 d B – 95dB)	7 hrs (15 mins - 8 hrs+)
All terrain vehicles	86 d B (84 d B – 87dB)	7 hrs (4 - 8 hrs)
Angle grinders Others in workshop	98 d B (96 d B – 100 dB) 90 d B (87 d B – 93dB)	20 mins (15 - 30 mins) 2 hrs (1 - 5 hrs)
Augers	93 d B (89 d B – 96dB)	1 hr (30 mins - 3 hrs)
Bench grinders Others in workshop	99 d B (94 d B – 104 dB) 89 d B (82 d B -96 dB)	18 mins (5 mins - 1 hr) 3 hrs (40 mins - 8 hrs)
Bulldozers	99 d B (97 d B – 100 dB)	18 mins (15 - 30 mins)
Chainsaws Others stacking wood	106 dB (104d B – 107 d B) 96 d B (93 d B – 99dB)	3 mins (2 - 5 mins) 40 mins (15 - 50 mins)
Circular saws Others in workshop	99 d B (98 d B – 101 dB) 89 d B (84 d B – 94 dB)	18 mins (10 - 20 mins) 3 hrs (1- 8 hrs)
Cotton module presses Others in field (rakers)	86 d B (85 d B – 88dB) 84 d B (82 d B – 86dB)	6 hrs (4 - 8 hrs) 8 hrs (6 - 8 hrs)
Cotton pickers Avg. increase with radio on * Others in field (machines idle) * Others in field (picker turning) *	81 d B (78 d B – 8 dB) 1 - 3 dB 83 d B (77 d B – 89dB) 94 d B	8 hrs 8 - 8 hrs 4 hrs - 8 hrs+ 8 hrs (4 - 8 hrs +) 1 hr
Dairies - herringbone (24 bay) pit	73 d B (71 d B – 75dB)	No Limit
Farm trucks	85 d B (83 d B – 88dB)	8 hrs (4 - 8 hrs)

**Table: Average noise levels and recommended exposure limits
for common farm machinery / activities (on 48 Australian farms)**

Typical operating conditions / position of worker	Noise Level at the ear Average (& Range) L dB(A)	Recommended limit of exposure without the use of hearing protection. <i>NB: Noise exposure risk for each activity in the day is cumulative toward the overall noise exposure risk. * *</i>
Firearms	Lpk 140 + dB	No Safe Exposure
Forklifts *	84 d B (81 d B – 88dB)	8 hrs (4 - 8 hrs)
Harvesters	83 d B (75 d B – 91dB)	8 hrs (2 - 8 hrs+)
Avg. increase with radio on * Others in field *	2 - 5 dB 90 d B	40 mins – 8 hrs+ 2 hrs
Irrigation pumps	100 dB (96 dB – 104 d B)	15 mins (5 -30 mins)
Motorbikes - 2 wheel *	81 d B (70 d B – 92dB)	8 hrs (1.5 - 8 hrs+)
Packing shed workers	80 d B (78 d B – 82dB)	8 hrs+ (8 - 8 hrs+)
Pig handling - suckers *	109 dB	1 - 2 mins
Pig sheds - manual feeding *	87 d B (74 d B – 99dB)	5 hrs (15 mins - 8 hrs+)
Shearers Others in shed	86 d B (84 d B – 87dB) 80 d B (77 d B – 83dB)	7 hrs (4 - 8 hrs) 8 hrs+ (8 - 8 hrs+)
Sugarcane harvester * Increase with radio on *	86 d B 2dB	7 hrs 4 hrs
Tractors with cabins (all ages)	76 d B (75 d B – 78dB)	No Limit 8 hrs (8 - 8 hrs+)
Tractors with cabins 10 yrs + Avg. increase with radio on Others in field	81 d B (77 d B – 84dB) 3 - 5 dB 85 d B (80 d B – 90dB)	4 hrs - 8 hrs + 8 hrs (2 - 8 hrs+)

What to do about it?

All farmers, farm workers and farm families are exposed to excessive farm noise are at risk of hearing loss through noise injury.

To reduce the risk of damage to hearing, think S.A.F.E about noise hazards.

- **S See it**

Identify noisy farm activities.

- **A Assess it**

Identify who is at risk, how often, how loud & for how long.

- **F Fix it**

Reduce noise levels or exposure to noise.
Use a variety of controls.

- **E Evaluate it**

Continue to monitor on-farm noise.



Hearing Protection

1. Eliminate the hazard

- Can the job be done without the hazard?
(eg. automatic feeders for pig sheds).



2. Substitution for a lesser hazard

- Use a quieter alternative – if possible, use a cabined tractor instead of one without a cabin.
- Buy a quieter alternative when the time comes to replace machinery (check the dB labels).



3. Engineering or design option

- Install mufflers on equipment.
- Cabins on tractors & other machinery
- Rearrange the workshop layout.
- Create noise barriers and insulated walls.
- Use plastic instead of metal chutes, electric vs diesel motors.
- Rearrange workshops so noisy tools are located towards the front or opening of the shed to disperse the noise outside.
- Apply vibration-reducing mats under stationary machinery and stiffening plates to vibrating surfaces.





4. Safer work practices and procedures

- Regularly maintain equipment – engines, seals, brackets and mufflers.
- Avoid noise - stand further away to supervise.
- Limit time exposed in one day – rotate tasks.
- Provide hearing protection & information on noise to all working
- Safety sign noisy areas.

5. Personal protective equipment

- Ear plugs or ear muffs – either are effective.
- Comfortable – try first & learn to fit correctly.
- Can be compatible with other PPE – hats, goggles.
- Must be Australian Standards approved (AS/NZ 1270)
- Adequate protection is a SLC(80) rating of around 20dB or more for most jobs, higher for shooting.
- Check the product packaging guide.



Hearing Protection



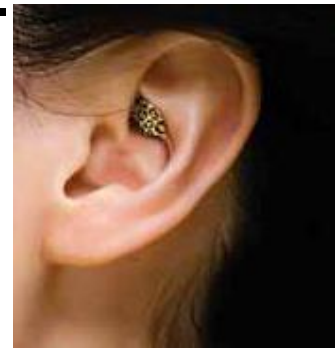
Hearing Aids



The Office of Hearing Services manages the issuing of vouchers for eligible clients to access/acquire hearing assessments and devices from hearing service providers of their choice or from Australian Hearing .

Hearing Services (Voucher) Payments

Payments are made to hearing service providers for the delivery of services under the voucher system to eligible clients. The services include hearing assessments, the cost of the hearing device and its fitting, and the government contribution to the maintenance and repair of hearing devices.



Eligibility requirements

Australian Citizens and Permanent Residents 21 years or older and in receipt of:

- a Pensioner Concession Card;
- receiving Sickness Allowance from Centrelink;
- the holder of a Gold Repatriation Health Card (DVA) issued for all conditions;
- the holder of a White Repatriation Health Card (DVA) issued for conditions that include hearing loss;
- a dependent of a person in one of the above categories;
- a member of the Australian Defence Force; or
- undergoing an Australian Government funded vocational rehabilitation service and you are referred by your service provider.



Wimmera Hearing Inc found that from 382 farmers screened with hearing loss, 310 of them did not have a pension and did not qualify for eligibility for Government subsidy. This means that they would personally need to pay for hearing aids or assistive equipment.