



## **Ramsey-Coote Bedwetting alarm**

### **Manual**

### **HSE Enuresis Clinics**



Feidhmeannacht na Seirbhíse Sláinte  
Health Service Executive

Adapted by Nick van der Spek  
Version 1.5  
15/04/2018



## **Manual Ramsey-Coote Bedwetting alarm**

### **Parents**

We have put together information to help you in getting your child dry at night. Most children will become dry however some may continue to have this problem. It is important that you follow the instructions from your practitioner.

An alarm system designed to assist in the training of children who are incontinent of urine while asleep. The equipment consists of a soft rubber mat which is placed on the bed and is connected to the bedside alarm unit. The mat triggers an alarm upon sensing urine.

### **General Details**

Product information: Ramey-Coote Alarm PB Model:

- The bed pad contains the sensor of the alarm unit. The sensor is two strands of wire braid in parallel recessed grooves with a connecting cable of two strands of wire and plugs. By recessing the braid away from the person, these grooves minimise false alarms.
- The alarm unit contains the alarm's electronics, bell, battery, fuse and control panel LED.
- The alarm's rechargeable battery is a nickel-cadmium type, requiring a charging time of up to 14 hours. In normal use it needs to be charged once a week.
- An alternative or addition to the alarm bell is the 'Silent Wakener', suitable for the hearing impaired or those sensitive to the sound of the bell. The wakener is placed under the pillow and produces a vibration to wake the person.
- An extension buzzer is available. It has a high tone pulsed sound and lamp to alert the carer that the alarm has been triggered.

The construction of the sensor pad enables easy cleaning and storage. After wetting, the pad is wiped clean and dry and then is immediately ready for re-use. The pad's materials withstand urine, oil-based germicides and autoclave temperatures. The flexible pad rolls up and fits into a sleeve cover for ease of transport and handling.

- Batteries. The monitor uses a re-chargeable battery, the nickel-cadmium type, with ratings: 7.2 volt 600 mAH. Charging time is 14 hours from discharged to charged condition. The battery lamp indicates that the battery charger is charging the internal battery. It confirms that the user has plugged the charger into the power point and into the Monitor Unit, that the power switch is on, that current is flowing into the battery. Ramsey Coote supplies the battery charger as part of the Monitor Unit. The plug of the charger and the socket of the unit are of a specific type to minimize inadvertent connection of any other charger and give safe operation.

## Method of Use

The person's bed is made up with the bed pad beneath the lower sheet, which is placed to collect any flow or urine. A two-wire cable with plugs connects the bed pad to the alarm unit at its control panel. ON -Standby Mode monitors the dry condition of the bed-pad. When the person urinates onto the bed pad, the flow of urine completes the circuit between the recessed wire braids of the bed-pad. This wet condition instantly triggers the alarm's bell and switches on its lamp to light up the control panel. The wakened person selects the mode switch on the back-lit control panel to the OFF position to silence the bell and turn the alarm to off.

## What Parents Need To Know

### What is bed wetting?

Bed wetting, also referred to as **Enuresis** is a common issue in many Irish households which affects children of all ages. This problem entails children who lack night-time bladder control, at an age which control is expected (between the ages of 5-19). Between 10% -20% of children around the age of five-years-old wet the bed at night.

Bed wetting has a range of known causes including:

- difficulty in arousing from sleep in response to a full bladder
- a breakdown in the communication between the brain and bladder
- producing more urine at night than the bladder can store
- a family history of bed wetting

A child's bladder is much different to that of an adult's. A child has much less control over their bladder, and this can be frustrating for both parents and children. It is important that parents understand that children, mostly under the age of 6, have limited control over their bladder, and cannot begin a stream of urine unless their bladders are full. As children get older, they are normally expected to grow out of this problem; however this isn't always the case.

### What you can do as a parent?

There are various actions which parents can take to help their child through, and overcome the problem of bed wetting, which include:

- Reassure your child that bedwetting is normal and will stop in time.
- Explain the reasons why they are wetting the bed.
- Give your child as much encouragement, especially after accidents.
- Keep a diary to monitor and record progress
- Reward improvement for declining frequency of wetting
- Establish a routine of taking your child to the toilet before bedtime.
- Avoid criticising or punishing your child as bed wetting is an unconscious problem.

Implementing these factors with your children can help them better understand that they aren't alone and it is a common issue. It is important to discuss the factors of bed wetting, as it can cause a child to lose self-esteem, or lack confidence.

### What sort of treatment is available?

Ramsey Coote Instruments have developed a device which has been proven to have a high success rate with helping to treat bedwetting in children. The *bell-and-pad* treatment is developed from a concept of a physiological link between the act of bed wetting, and an alarm system which triggers as a response to wetting.

Practitioners across Australia have used this effective treatment for many years, and it is the benchmarked technique due to its high level of success. We have recently introduced this alarm in Ireland and the result

thus far is very encouraging. Practitioners will coach the children and support the parents throughout the program to ensure the most successful outcome, and to minimize the chances of relapse.

### Why use a Ramsey Coote Alarm?

The Ramsey Coote Instruments' product has an alarm control unit and this is attached to a bed-pad. The bed-pad is situated so that the child's bottom is resting on it while they are asleep. It has been designed so that the urine goes into the grooves of the pad and a minimum of a tablespoon of urine will set off the alarm once it hits the sensors in the pad.

The alarm has been designed to ring at a high frequency, which will help arouse the sleep child once the bed-pad has been wet, simultaneously a light in the alarm will switch on. The aim is to get the child awake as soon as possible and get them to switch the alarm off. In one of our newer models there is a counter that starts once the alarm has been set off and it will time how quickly the child takes to switch it off. This can help the child show that they are improving as the time to respond decreases with time

### What is dry for a child?

- It takes three stages to achieve dryness - initial assessment, use of alarm and bed-pad then over learning to prevent relapse.
- Children may become dry within 6-8 weeks
- *It is important that prior to treatment that children have a medical check up to ensure that they have no other medical condition*

### In summary the Ramsey Coote Alarm has

- Loud bell to arouse the child and lamp to show where the alarm 'off' switch is located.
- Large soft bed-pad that will contain the urine and rebated sensors prevent the trigger of perspiration that gives false alarm
- You can assess progress, as you will see the size of the wet patches on the large bed-pad or for the PB model a counter will show how long it takes for the child to respond to the alarm.
- The child has a normal sleep routine and they are free to roll around in the bed with the bell and pad system
- The simple operation of the alarm is easy for the child to switch off.

## 9 Activities Which Increase the Chance of Success with Ramsey-Coote Alarms

1. ***Do a dummy run with the child***  
Testing the alarm with the child, using a paper clip or a table spoon of salty (saline) water to close the circuit teaches the child that they will not be electrocuted. Rehearse the procedure of waking and actions again and again. See the guidelines' sheet with the "Magic Three"
2. ***Let the child do all the work***  
The parent should supervise; help the child **WAKE** to the alarm. Only the child should switch off the alarm. (Motivated child important)
3. ***Keep a diary each day- make a record of the time it takes to wake***  
This will help show the progress the child is making.
4. ***Don't restrict fluids***  
A constipated child though lack of fluids can hinder the learning process. Having hard poo in the bowel can push up against the bladder subjecting it to unnecessary pressure and may increase bedwetting.
5. ***Empty bladder before bed***  
Have usual night-time drink then go to the toilet before bed. See the Three T's.
6. ***Wear underpants rather than pyjamas to bed (Even consider going 'Commando')***  
The alarm should sound as soon as possible after the child begins to wet. If pyjamas, boxer shorts or nighties are worn these will first absorb a considerable amount of urine before it dribbles onto the bed pad. Having a thin cotton sheet, preferably quite threadbare directly on top of the bed pad will enable the urine to trigger the alarm sooner.
7. ***Test the alarm nightly***  
Get the child to test the alarm with a paper clip every night and run through in their mind or out loud what they will do when the alarm sounds at night.
8. ***Overlearning***  
If dry for 14 nights in a row, allow the child to have a big glass of water to drink before going bed. This further challenges the bladder and makes wetting more likely giving the alarm more of a chance to have an effect. It tests whether the brain and bladder have learnt to hold on or to wake up the child to go to the washroom.
9. ***Praise and encouragement***  
A positive attitude on the part of the therapist, parent and child is vital.

### **Preparation for the Bedwetter**

1. The Alarm should be fully charged by the parent and charger packed away in the box.
2. At least 2 mattress protectors which can be easily removed. Change when urine spills onto it. (A wet mattress can trigger off the alarm giving a false alarming).
3. Bed pad placed correctly on the bed plugged into the alarm and alarm switched on.
4. Alarm placed safely a distance away from the child's bed but somewhere the child can easily see it in the night. (They must be awake to switch it off)
5. At least 2 very thin threadbare sheets. Lay one over the rubber bed pad. Have the other ready for changing after bed wetting occurs.
6. Thick thirsty towel for mopping up urine from the rubber bed pad.
7. A clean damp cloth to wipe over bed pad, then dry with towel again before laying on the clean dry threadbare sheet.
8. In the morning make sure rubber bed pad is dried and aired before putting back on the bed over the dry mattress protector.
9. FINALLY if the child is afraid of the dark have adequate lighting all the way to the toilet and if it's cold have adequate heating so they won't be discouraged from getting up.

## For the practitioner

A good practitioner will help coach you and your child in helping them become dry.

### **PB Model**

The PB model has been designed with features including that of the elapsed timer. This timer is used to measure the time when the bell starts to ring to when the child switches the bell off. It shows minutes and seconds and this is recorded in the treatment sheet and can give an evidenced based outcome to the progressive improvement of the child becoming dry.

The PB model also has a cast bell that has a higher frequency sound at a louder volume that stimulates wakening. It also has "light emitting diodes" (LEDs) in the light strip and these require less energy from the alarm.

All alarm control units come with rechargeable batteries that can be charged once a week during the day along with the charger, a bed-pad and cover, plus *Bedwetting: A Manual for Parents*. All our products come with a two year warranty, are made to Australian Standard 2394 and have a Class 1 device classification with the TGA, plus CE Mark and FDA registrations.

### **Servicing**

Practitioners will need to sanitize and clean bed-pads between each client that is seen. The bed-pad will last between 5-10 years and may last longer if it is regularly cleaned and maintained. There is wear and tear over time so it is important to inspect for any leakage, and test the electrical operations. The handling of the bed-pad during cleaning provides the opportunity to inspect for any build-up of residues and lint particularly at the end of the braids.

### **Bed-pad Cleaning and Sanitizing**

Many organisations will require protocols for cleaning and products to help with the cleaning. They can use detergent in warm soapy water like Dettol Liquid or 2.8% Benzalkonium Chloride solution will also work plus the facility will need a sink or trough were it can be cleaned so the following protocol for cleaning can be used:

1. Select cleaner such as Dettol Liquid and mix as per instructions in warm or cold water.
2. Submerge Bed-pad (ensure terminals and cord are not submerged)
3. Using a soft brush, scrub each braided channel removing all traces of lint, especially at the end of the groove.
4. Remove from solution and rinse well with water
5. Hang over clothes rack to air dry, wire side up, indoors. Prolonged exposure to intense sunlight or heat could damage the rubber.
6. When completely dry, roll up bed-pad with braid to the outside, wrap cord around bed-pad then place in the cover. It is ready for the next child to use.
7. Remember, like hand washing, that it is the movement of the scrubbing brush that will clean the bed-pad
8. Continued exposure of the bed-pad to very hot water (over 70 degrees), bleach or sunlight will degrade the rubber and shorten the life of the bed-pad.



## Servicing and Maintenance

### Parents weekly service

The parents have two main roles when it comes to servicing and maintaining the bell and pad alarm system.

- **Charging the alarm's battery:** Once a week the alarm battery is required to be charged by attaching the charger cable to the unit during the day. Ensuring the red On/Off lever is in the up position and the red 'charging' light is on will allow the unit to charge correctly.
- **Inspection:** An inspection of the unit switch, charger plug and charger pins is mandatory. Also an inspection of the battery charger indicator by ensuring it shines bright red, indicating that charging is occurring.
- **Cleaning the bed pad:** A high level of sanitation of the bed pad is mandatory to ensure hygienic equipment, and also to avoid developing odours.

### Practitioners Inspections and Servicing

Practitioners are required to conduct various inspections which include:

- **Inspection of the bell control unit:** A thorough inspection of the unit is needed to be carried out to determine if the unit has been either damaged or tampered with. A damaged unit is most commonly caused from being dropped or has fallen. Obvious signs of damage may include missing cap on switches or even broken or bent leavers.
- **Inspection of the battery charger:** A thorough inspection of the socket, lead, and power plug pins for any damage, as well as any twists, knots, or cuts in the cord need to be recorded, if needed to be sent back for repair or a new charger is sent.
- **Inspecting the bed pad:** An inspection of the bed pad requires specific focus on the wire or braids, as raised or fractured braids (electrodes) may cause discomfort, scarification of the skin, or false alarms through perspiration. Any signed of damage may stop the sensing of wetting. A "side-cutter" can remove and wires sticking out. See for details page 19 Practitioners Manual.
- **Sanitizing and cleaning the pad:** Mixtures of mild domestic disinfectants, such as Dettol and dish-washing detergents are commonly used. During sanitation, it is important to avoid wetting the electrical cables of the bed pad. It is recommended that the bed-pad be cleaned and dried between each client.

### Manufacturer's Repairs and Upgrades

Ramsey Coote Instruments recommends that alarms be returned to us for inspection and maintenance every three to four years. This is to ensure that the alarms meet operating specifications. The components which are most commonly replaced are the:

- **Internal battery:** May last up to three years with constant use.
- **Lamp:** The newer alarms have LEDs and these should last the life of the alarm.
- **Bell:** The bell is inspected as a precautionary measure however it is expected to last the life of the control unit.
- **Pad rubber: Life ranges up to 10 years, depending on usage of the bed-pad. The bed-pads can be repaired to last longer.**
- **The cord on the bed-pad can be replaced by undoing the press studs and re-attaching a new cord**

DO NOT USE THE BED-PAD IF THE CHILD HAS AN ILLNESS, HAS DIARRHOEA, OR IS MENSTRUATING

## **Solutions to problems:**

**Problem:** **When demonstrating the equipment the alarm fails to sound**

- Solution:**
- The alarm may not be connected. Check that the jacks are pushed into the points.
  - Check that the "on" switch is turned on.
  - The wet patch may not be large enough. It must connect the two wire lines of braid to complete the circuit.
  - Plain water is used or the salt solution may not be strong enough. Make up another solution, increasing the amount of salt used. A table spoon of salty water should be sufficient to trigger the alarm.
  - The batteries maybe flat. Usually the alarm bell sounds faint and the light flickers if this is the case. Charge up the battery.

**Problem:** **The child wets but the alarm does not go off**

**Solution:** Test the equipment using the salt solution or the paper clip.

If the alarm fails to sound do the following:

- The batteries maybe flat. Usually the alarm bell sounds faint and the light flickers if this is the case. Charge up the battery.
- Otherwise, contact the clinic ASAP.

If the alarm sounds, consider the following solutions:

- If the child is not wetting very much the bottom sheet may be soaking up the urine. Try a threadbare sheet.
- The child may have wriggled down the bed or be sleeping higher than the pad. Check for the location of the wet spot. You may have to experiment with a few pad positions.

**Problem:** **The alarm goes off but the child has not wet the bed**

- Solution:**
- The false alarm maybe due to excessive perspiration. Lighter bed-covering and night cloths might help. If the child's excessive perspiration is due to high temperature through illness disconnect the alarm till the child is well.
  - Another common cause is residual urine on the pad or draw sheet. Clean and dry it well.
  - Sometimes the mattress is urine soaked and the terminals on the back of the bed-pad touch this and trigger the alarm, so a waterproof over the mattress and under the bed-pad prevent this happening.

**Problem:** **The alarm does not waken the child**

- Solution:**
- This sometimes happens in the first couple of days. It is essential that you wake the child and get her to switch off the alarm. Eventually the child will "tune in" and wake to the alarm herself.
  - Gradually bring the alarm box closer and closer to the child whilst gently wakening her is a good idea.
  - Ensure that he does the 3T's and the Magic Three and is motivated to become dry.
  - Another suggestion is for the parent to sleep in the room for the first week or two, to be able to waken the child quickly, e.g. with a wet cloth.

**Problem:** **The child hears the alarm, leans over, turns it off and goes back to sleep**

- Solution:**
- Once again this is a job for the parent. You must make sure that the child gets out of the bed and goes to the toilet. Moving the alarm box far enough away so that the child cannot reach it whilst still lying down will help. The child would then have to get out of the bed to turn the alarm off.

**Problem:** **The child seems reluctant to go to the toilet during the night**

- Solution:**
- Leaving the toilet light on and giving the child a torch to put under the pillow may lessen his reluctance. Tell him that you are quite willing to accompany him if he calls out to you. Alternatively your child might prefer a chamber pot in his room.

**Problem:** **The alarm is too loud for the child**

- Solution:**
- Get the child to get used to it during the day time and let him be in charge.
  - A silent awakener and extension buzzer can be used as an alternative.
  - Have an indirect light in the room at night.

## Video Instructions

### How to charge the battery

Video on: <http://ramseycoote.com.au/products/#1495444017174-043cf80d-6a16>

#### **Safety Rules:**

1. An adult takes responsibility for charging the control unit.
2. The "charger adaptor" must be kept in the supplied box away from the reach of children.
3. The bell control unit must be charged during the day, once a week and away from the child's bedroom.

#### **Charging instructions:**

1. Take the charger and plug into the socket on the side of the control unit.



2. Take other end and plug into power point.
3. Ensure red switch is in "Off" position.
4. Red light on front of control unit will stay on once mains power is switched on and unit being charged.



5. Leave on for one day during the week to ensure the batteries are charged.
6. Once the batteries have been recharged during the day, the power can be switched off and the control unit can be reconnected to the bed-pad ready to be used at night.
7. The charger can be unplugged from the control unit and packed away from children in the box supplied.
8. If the child wets the bed-pad more than once a night and takes a while to switch the alarm off, it is a good idea to re-charge the batteries midweek (usually in the first week).

## How to set up the alarm

Video on: <https://www.youtube.com/watch?v=93OvW6Orm28>

### How to set up the alarm: (1 min 52 sec)



The bed-pad is placed across the bed with either a towel or water proof cover to protect the bottom sheet and mattress.



Unwrap the bed-pad. Remember the braining is on the outside when rolled up, and place it across the bed.



Then attach the plug from the bed-pad to the control unit. Remember avoid tripping hazard by placing the cord so that the child can safely get in and out of bed.



A threadbare sheet, pillow case or draw sheet can be placed on the bed-pad to make it more comfortable for the child.



The control unit is placed such that the child has to get out of the bed to turn it off.



It can be switched on by the child ready for when they go to bed.

## **How to set up the alarm**

Video on: <https://www.youtube.com/watch?v=HzoVE2uhp8E>

### **Testing the Ramsey-Coote Alarm (using a 1) paper clip and 2) saline solution.**

Turn the switch on the control unit to the "On" position and use a paper clip to connect the two channels of individual braid



You can see on the elapsed timer how long it takes for the child to respond in the home setting. This is an objective measure of progress.



To turn the alarm off, turn the red switch on the control unit (the alarm) to the "Off" position. The bell sound ceases ringing and the timer stops so the time can be recorded.

The same can be done with salt water (not tap water as this won't work). After alarming, the child gets up, turns of the alarm and goes to the toilet to finish weeing and he removes the cover from the bed-pad and dries the pad with a dry towel.



## **Bed-pad cleaning recommendations:**

Video on: <https://www.youtube.com/watch?v=0eMBJwI1GEc>

### **Bed-pad cleaning**

This alarm is a reusable device and needs to be cleaned daily as per instructions. The above link shows you how.

- Select a cleaner such as a liquid general detergent like Flash or if preferred a disinfectant detergent like Dettol.
- Best to wear gloves, and using a soft (nail) brush, scrub each braided channel removing all traces of residue or debris especially at the end of the groove.
- Scrub each individual braided channel.



- Rinse bed-pad in solution



- Remove bed-pad from solution and rinse with tap water (can be cold water)



- Hang over clothes rack to air dry. Wire side up, indoors. Prolonged exposure to intense sunlight or heat could damage the rubber.



This manual is based on the 1994 Ramsey-Coote "Bedwetting, a manual for parents" by Jan Matthews and web pages by Ramsey-Coote Instruments. The Ramsey-Coote manual was adapted for the Irish population and to be in line with the Irish National Guidelines for the Management of Mono-symptomatic Enuresis by Dr Nick van der Spek, Consultant Paediatrician in Cavan General Hospital.  
March 2018

Terminology adheres to standards recommended by the ICCS in 2014 except where specifically noted