

Adherence to medical advice A2

Read online at pastopic.com/cambridge/psychology-9990/notes/adherence-to-medical-advice

Last checked 6 October 2026

Read first: [Research methods](#), [Ethics](#)

© 2026 Pastopic. Free for personal study. Please share the link, not the file.

What you need to know

Adherence to medical advice is the second topic of the Health psychology option (Papers 3 and 4).

Adherence means doing what a doctor or other health worker has advised: taking medicine as prescribed, attending appointments, following a diet or exercise plan. The topic has three parts: why people don't adhere, how we can tell, and how to make them adhere more. You should be able to:

1. **Types of non-adherence:** **failure to follow treatment** and **failure to attend appointments**, and the **problems** non-adherence causes.
2. **Why patients do not adhere:** **rational non-adherence**, with a study such as **Laba et al. (2012)**, and the **Health Belief Model**.
3. **Subjective measures:** **clinical interviews** and **semi-structured interviews**, with a study such as **Riekert and Drotar (1999)**.
4. **Objective measures:** **pill counting** and **medication dispensers**, with a study such as **Chung and Naya (2000)**.
5. **Biological measures:** **blood** and **urine** samples.
6. **Improving adherence in children**, with a study such as **Chaney et al. (2004)**.
7. **Individual behavioural techniques:** **contracts**, **prompts** and **customising treatment**.
8. **Community interventions**, through the key study **Yokley and Glenwick (1984)**, which you must know in detail.
9. **Evaluate all of it** with the issues the syllabus names for this topic: application to everyday life, individual and situational explanations, reductionism versus holism, idiographic versus nomothetic, generalisations from findings, quantitative and qualitative data, validity, reliability, use of children in research, experiments and questionnaires.

Studies marked "e.g." in the syllabus can be swapped for another suitable one; the key study cannot. Before 2024 this topic also had Bulpitt, Roth and Caron, Sherman et al., Watt et al. and Ley; they appear briefly at the end of "Understand it" because older questions ask about them.

Understand it

The topic at a glance

Part	Idea	Study to know
Why patients do not adhere	Types and problems; rational non-adherence	Laba et al. (2012)
Why patients do not adhere	Health Belief Model	(a model, no single study)
Measuring non-adherence	Subjective: clinical and semi-structured interviews	Riekert and Drotar (1999)
Measuring non-adherence	Objective: pill counting, medication dispensers	Chung and Naya (2000)
Measuring non-adherence	Biological: blood and urine samples	(no single study)
Improving adherence	Children	Chaney et al. (2004)
Improving adherence	Contracts, prompts, customising treatment	(no single study)
Improving adherence	Community interventions	Yokley and Glenwick (1984), key study

Types of non-adherence and the problems they cause

- **Failure to follow treatment:** not taking medicine at all, missing doses, taking the wrong dose or at the wrong time, stopping a course early because they feel better, or not making a change in lifestyle (diet, exercise, giving up smoking) that was advised.
- **Failure to attend appointments:** missing a check-up, test, vaccination or follow-up visit, or not turning up for treatment.

Problems caused:

- the patient's health does not improve, or gets worse, and they may need more serious treatment or a hospital stay later;
- a doctor who wrongly thinks the patient took the medicine may decide it doesn't work and raise the dose or switch drugs;
- medicine and money are wasted, and unused pills left at home can be dangerous within a child's reach;
- a missed appointment wastes the health worker's time and a slot another patient could have had;
- stopping antibiotics early can help bacteria become resistant.

Rational non-adherence

Rational non-adherence means the patient makes a reasoned **decision** not to follow the advice. They weigh up the **costs** of the treatment against its **benefits** (a **cost-benefit analysis**), and if the costs seem bigger, not adhering looks like the sensible choice. Costs include side effects, the price of the medicine, how often and how awkwardly it must be taken, and having to give up something such as alcohol. Benefits include feeling better, fewer symptoms and a lower chance of dying.

The decision is rational **from the patient's point of view**, even if the doctor disagrees. People tend to notice risks they can feel now (side effects) more than benefits that are invisible or far in the future (a lower chance of a stroke in ten years).

A study of rational non-adherence: Laba et al. (2012)

Aim: to find out which features of a medicine make people decide to keep taking it or to stop.

Sample: 161 Australian adults from the community.

Method: an **online survey** in **three sections**: the medicines they took now, their attitudes to medicines, and a series of **hypothetical choices**. In each choice they imagined taking two medicines for long-term conditions and picked the one they would rather **keep taking**. The two medicines differed in features such as:

- how severe and frequent the symptoms were;
- the chance of **death** from the condition;
- how bad the **side effects** were now, and the chance of unwanted effects in the **future**;
- how the medicine had to be taken (once a day or four times a day);
- whether **alcohol** had to be avoided;
- the **monthly cost**.

Because each feature was varied separately, the researchers could see how much each one weighed in the decision.

Results:

- **Harms, benefits** (now and in the long term), **cost** and the **regimen** (how often it is taken) all had a significant effect on choices; symptom severity and alcohol restrictions did not.
- People avoided **harm** more than they sought **benefit**, and **current side effects** mattered more than future ones.
- Reducing the **chance of death** mattered a lot.
- People preferred a medicine taken **once a day** to one taken four times a day, but would accept the four-times-a-day one if it cut side effects enough.
- People **without private health insurance** were more sensitive to **cost**.

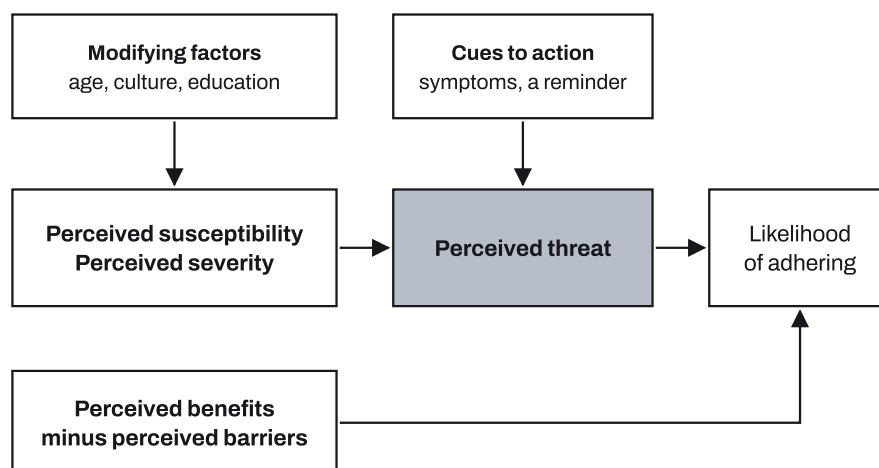
Conclusion: people's choices about medicine follow a clear, sensible weighing of costs and benefits, so non-adherence can be rational.

Evaluating it:

- **Application to everyday life:** doctors can choose medicines with fewer side effects, simpler regimens and lower costs, and explain the benefits clearly, to tip the balance towards adherence.
- **Validity:** the choices were imaginary, so what people said they would do may differ from what they really do with a real illness (low **ecological validity**).
- **Generalisations:** one country with its own health system and insurance; in a country where all medicine is free, cost would matter less.
- **Reductionism:** it breaks a decision into separate features, which lets each be measured, but real decisions also involve feelings, family and trust in the doctor.
- **Quantitative data:** easy to compare, but it doesn't say **why** a feature mattered to a person.

The Health Belief Model

The **Health Belief Model** (HBM; Becker and Rosenstock) predicts how likely a person is to take a health action, such as taking medicine, from what they **believe**.



- **Perceived susceptibility:** how likely the person thinks they are to get the illness, or to get worse without treatment.
- **Perceived severity:** how serious they think the illness or its effects would be.
- Together these make the **perceived threat**. The greater the threat, the more likely they are to act.
- **Cues to action:** things that trigger action: **internal** (symptoms, pain) or **external** (a reminder, advice from family, a media campaign, a friend falling ill).
- **Perceived benefits:** how much they think the treatment will help.
- **Perceived barriers:** what stands in the way: side effects, cost, time, travel, fear of injections.
- **Modifying factors:** age, gender, culture, education and personality change how each belief forms.
- **Self-efficacy** (added later): how confident the person is that they **can** carry out the advice.

A patient adheres when the threat feels real and the benefits outweigh the barriers. Non-adherence follows when, for example, a person thinks a disease with no symptoms (such as high blood pressure) is not serious, or the barriers (side effects, cost) seem greater than the benefits.

Evaluating the HBM and rational non-adherence:

- **Application to everyday life:** both point to practical changes: lower the barriers (cheaper, simpler medicine, easy clinic access), raise perceived benefits and threat with clear information, and add cues such as reminders.
- **Individual and situational explanations:** beliefs, self-efficacy and the personal weighing of costs are **individual**; cues to action, cost of medicine, clinic access, education and culture are **situational**. Both models mix the two.
- **Reductionism versus holism:** both break a decision into a few factors or a list of costs and benefits, which makes them testable, but people are not always rational; habit, emotion and forgetting also matter, so a holistic view is fuller.
- **Idiographic versus nomothetic:** both are **nomothetic**, aiming at general laws about everyone, which helps design treatment for large groups; but each patient's costs and benefits are their own (an **idiographic** view would study one patient's reasons in depth).
- **Generalisations:** both come from Western medicine; in other cultures, traditional medicine, religion and trust in doctors may shape adherence, and health systems differ in cost and access.
- **Validity:** the HBM has many parts and doesn't say how they combine, so it is hard to test exactly and explains only part of the difference between people.

Measuring non-adherence

Before a doctor can improve adherence, they need to know whether it is happening. There are three kinds of measure.

Kind	Examples	Strengths	Weaknesses
Subjective (the patient or a carer reports)	clinical interview, semi-structured interview, questionnaire, diary	cheap and quick; can find out why someone is not adhering (qualitative data)	patients may lie to look good (social desirability), forget, or not know; a parent may not know what the child does
Objective (counting or recording)	pill counting , electronic medication dispensers such as the TrackCap , checking repeat prescriptions	factual, not open to the patient's opinion; quantitative; can be done without the patient's effort	a pill removed or a prescription collected is not proof it was swallowed; patients can dump pills before a count
Biological (a body sample)	blood test, urine test (for the drug or a marker of it)	if the drug is found, it was taken; hard to fake	invasive or embarrassing; costly; only some drugs can be tested; shows only recent doses, so a pill taken just before the test hides earlier missed doses

- A **clinical interview** is carried out by a doctor or other clinician, often during a consultation, asking the patient how they take their medicine.

- A **semi-structured interview** has set questions that every patient is asked, plus follow-up questions that depend on the answers, so it gives comparable data and detail.
- An **objective measure** records a fact that cannot be disputed: the number of pills left, the time a bottle was opened, a drug found in blood.

Working out adherence from a pill count: $\text{adherence (\%)} = \frac{\text{doses taken}}{\text{doses prescribed}} \times 100$. If a patient told to take 2 tablets a day is given 60 tablets and 24 are left after 21 days, they took $60 - 24 = 36$ out of $2 \times 21 = 42$, so adherence is $\frac{36}{42} \times 100 = 85.7\%$.

A study of subjective measures: Riekert and Drotar (1999)

Aim: to see whether adolescents who take part in adherence research (by returning questionnaires) adhere differently from those who don't.

Sample: families of adolescents aged **11 to 18** with **insulin-dependent (type 1) diabetes** living with at least one parent. **94** families were approached. Adolescents were **excluded** if they had had diabetes for less than a year, had another **chronic illness**, or had a **developmental delay** such as Down's syndrome.

Procedure:

- Both the adolescent and the parent had to agree; **14** families did not consent, leaving **80**.
- At the clinic appointment parents filled in a questionnaire and adolescents gave **self-reports** of adherence, including a **semi-structured interview** about how they managed their diabetes (insulin, diet, testing blood sugar).
- **Medical data** were also collected, such as how well blood sugar was controlled.
- Families were then given further questionnaires to complete at home and **return by post**. **52** families returned them (**returners**); **28** did not (**non-returners**).

Results: returners had **better adherence** than non-returners and **tested their blood sugar more often**.

Conclusion: the people who take part in adherence studies tend to be the more adherent ones, so research samples can **overestimate** adherence, and the least adherent patients are the hardest to study.

Evaluating it:

- **Ethics:** consent was needed from both adolescent and parent, and families were free not to return the questionnaires (the right to withdraw); this protected them but cut the sample.
- **Self-reports:** interviews give detail and reasons, but adolescents may say they adhere more than they do; medical data were used as a check.
- **Generalisations:** one illness and one age group in the USA.
- **Application:** doctors should not assume that research figures for adherence apply to their least engaged patients.

A study of objective measures: Chung and Naya (2000)

Aim: to test the **TrackCap**, an electronic pill-bottle lid, as a way to measure adherence.

Sample: 57 asthma patients (32 men, 25 women) aged 18 to 55; 47 completed the study.

Procedure:

1. A **2–3 week screening** period checked the patients were suitable.
2. For **12 weeks** they were prescribed **20 mg** of the asthma drug **zafirlukast twice a day**, 12 hours apart and not with meals.
3. The tablets came in bottles with a **TrackCap** lid, which contained a **microprocessor** that recorded the date and time each time the bottle was opened.
4. Patients were given **56** tablets at a time and returned to the clinic every **3 weeks** for more, when the remaining tablets were **counted**.
5. They were told their pill-taking was being monitored, but not **how**.

Results: on days when exactly two doses were taken, the average gap between them was about **12½ hours**. Adherence was **89%** from the TrackCap (days with two openings at least 8 hours apart) and **92%** from the **pill count**.

Conclusion: the TrackCap is a convenient and effective way to monitor adherence, and it gives timing detail a pill count cannot.

Evaluating it:

- **Validity:** the TrackCap records the bottle being **opened**, not the pill being **swallowed**; it did not count openings less than a minute apart separately, didn't know how many tablets were taken out, and a lid left off for more than 15 minutes counted as an extra opening.
- **Demand characteristics:** patients knew they were monitored, so they may have adhered more than usual.
- **Generalisations:** 47 patients, one condition, one drug, 12 weeks.
- **Ethics:** patients consented and knew they were monitored, but were not told how (a mild deception).
- **Quantitative data:** precise and objective, but it does not explain **why** anyone missed a dose.

Biological measures

A **blood** or **urine** sample is tested for the drug itself or a chemical it leaves behind (a **marker**), or for an effect of the drug, such as lower cholesterol in someone taking statins. If the drug is there, it was taken: this is the most **objective** measure. But samples are **invasive** (needles) or **embarrassing** (urine), need consent, cost money and laboratory time, exist only for some drugs, and show only the last day or so: a patient who takes a pill just before the clinic visit looks adherent.

Improving adherence in children: Chaney et al. (2004)

Young children with **asthma** often don't take their preventer medicine properly through a **spacer** (a tube between the inhaler and a face mask). They may be bored, scared or upset by it, and parents give up.

Aim: to see whether the **Funhaler**, a spacer that turns breathing in the medicine into a game, improves adherence. (Chaney et al. come from the same research team as Watt et al., 2003, who first tested the Funhaler.)

The Funhaler: when the child breathes out properly, a **whistle** sounds and a **spinner** turns; the harder and deeper the breath, the louder the whistle. The toys are in a separate branch so they don't affect the dose. This is **positive reinforcement**: the fun is a reward for using it correctly, so the behaviour is repeated.

Sample: 32 Australian children aged **1.5 to 6** years with asthma.

Methodology:

- **Repeated measures:** each child used their usual spacer first, then the Funhaler, each for **two weeks**.
- Parents answered **matched questionnaires** about each device at the end of each period, in **interviews at home** by the **same** researcher.
- Parents also received **random telephone calls** asking whether the child had taken the medicine the **previous day**.

Results: with the Funhaler, parents reported medicating the child the previous day **38%** more often, and **60%** more children took the recommended **four or more** breaths per dose.

Conclusion: making medicine use rewarding improves young children's adherence.

Evaluating it:

- **Use of children in research:** children this young cannot give **informed consent** or understand the **right to withdraw**, so parents consented for them; the device was safe and helped their asthma.
- **Parents as reporters:** parents may not know whether the child really took the medicine properly, and may give a socially desirable answer, so the data may not be **valid**.
- **Experiments and validity:** repeated measures removes differences between children, but the Funhaler always came second (order effects; novelty may wear off), and two weeks says nothing about the long term.
- **Generalisations:** a small Australian sample of one age group.
- **Application:** simple, cheap and useful; but it teaches that medicine is taken because it is fun, not because it matters.

Individual behavioural techniques

These change behaviour directly, for one patient at a time.

- **Contracts:** a written agreement between the patient and the practitioner. It sets a clear, specific **goal** (for example, walk 30 minutes on five days a week), says how progress will be **checked** (a diary, a follow-up visit), and may include a small, realistic **reward** for keeping to it. Both sign it, which makes the patient feel committed, and the follow-up visits review it.
- **Prompts: reminders** at the time the action is due: a text message or phone call, an alarm, a sticker on the medicine box, a mailed reminder of an appointment, a calendar or a pill organiser with a slot for each day.
- **Customising treatment:** fitting the treatment to the patient's life: linking the pill to something they already do every day (brushing teeth, breakfast), choosing a once-a-day version, a liquid instead of a tablet, a taste a child likes, or an appointment time that fits their work.

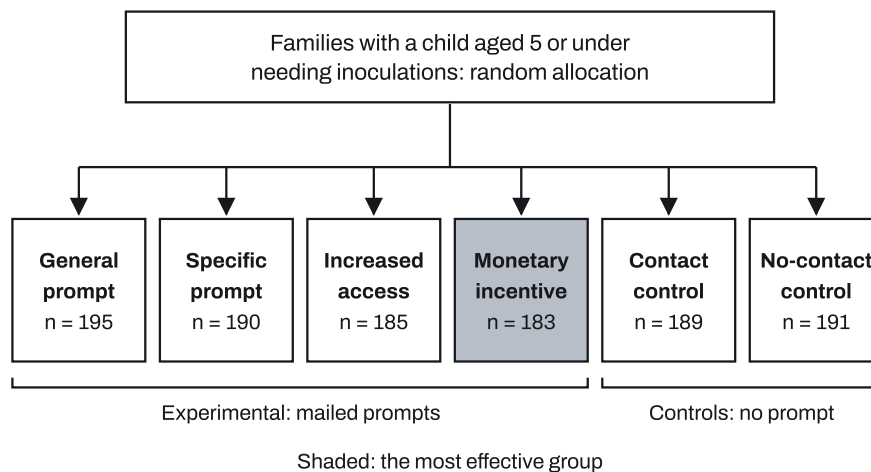
Community interventions: Yokley and Glenwick (1984), key study

A **community intervention** targets a whole population (a town, a district) instead of one patient at a time.

Aim: to compare ways of getting parents to take young children for overdue **immunisations** (inoculations), using prompts sent to a whole community.

Participants: families in a medium-sized city in the **Midwest of the USA** (about 300 000 people) with a child aged **5 or under** who needed one or more inoculations (such as diphtheria, tetanus or polio). The unit was the **family**.

Method: a **field experiment**. Families were **randomly allocated** to one of **six** conditions.



Group	Families	What they received
General prompt	195	a letter with general information about inoculations, saying their child needed them
Specific prompt	190	a letter naming the child and the particular inoculations needed, with the clinic's address and opening hours and that it was free
Increased access	185	the specific prompt plus extra clinic opening hours (with free childcare)

Group	Families	What they received
Monetary incentive	183	the specific prompt plus entry into a lottery with \$175 of cash prizes for children who attended
Contact control	189	contacted by telephone for basic information, but no prompt
No-contact control	191	no contact at all

Avoiding confounding: if children were the unit, brothers and sisters in one family could get different letters, and the family's response to one letter would affect the other child. So **families**, not children, were allocated, and each family got only one kind of prompt.

Dependent variables (measured from clinic records over the following **3 months**):

1. the number of target children who received **one or more** inoculations at the clinic;
2. the number of target children who **attended** the clinic for any reason;
3. the **total number** of inoculations the target children received.

Results: the **monetary incentive** had the biggest effect, followed by **increased access**, the **specific prompt** and then the **general prompt**. The more specific and helpful the prompt, the more children were immunised.

Conclusion: cheap mailed prompts can raise adherence across a community, especially when they are specific and make attending easier or more rewarding.

Evaluating it:

- **Experiments:** a **field experiment** in people's real homes, so behaviour was natural (high **ecological validity**), and families didn't know they were in a study; random allocation and two control groups gave a fair comparison. But other events in the town over three months could not be controlled.
- **Control groups:** the **no-contact** group shows the baseline (how many would have come anyway); the **contact control** shows whether simply being contacted, without a prompt, made a difference.
- **Objective data:** clinic records of inoculations are facts: a child was inoculated or not, so there is no self-report bias, and the numbers can be compared between groups.
- **Postal letters and questionnaires:** some families may not receive or read the letter, or read it and forget or delay; postal questionnaires are often not returned, and printing and postage cost money, so data are lost.
- **Ethics:** families did not consent to taking part; the no-contact group got no help.
- **Generalisations:** one US city in the 1980s; a cash lottery may not suit every culture.
- **Application:** health services can use specific reminders and easier access; a cash incentive is effective but costly.

Other health-promotion strategies

Questions sometimes ask for a strategy other than mailed prompts: **fear arousal** (showing the bad consequences of not adhering, kept at a low or moderate level), **providing information** (a leaflet or manual explaining why and how to take the treatment), advertisements on television or social media, messages sent through schools, emails or text messages.

Issues and debates for this topic

Issue	How it applies here
Application to everyday life	Measures, behavioural techniques and prompts are used by real doctors; the HBM and Laba et al. show which barriers to lower.
Individual and situational explanations	Beliefs, self-efficacy and forgetfulness are individual; cost, access, cues and culture are situational.
Reductionism versus holism	The HBM and cost-benefit analysis reduce a decision to a few factors; real adherence also involves emotion, habit and family.
Idiographic versus nomothetic	The models seek general laws (nomothetic); each patient's reasons are unique (idiographic), which helps one patient but gives no general law.
Generalisations from findings	Small or narrow samples (47 asthma patients, 32 young children, one US city) and Western health systems.
Quantitative and qualitative data	Pill counts, TrackCap records and inoculation numbers are quantitative; interviews can add qualitative reasons.
Validity	Self-reports may be socially desirable; an opened bottle or collected prescription doesn't prove the drug was taken.
Reliability	Objective measures and standard questionnaires give consistent results; open interviews are harder to repeat exactly.
Use of children in research	Chaney et al. and Riekert and Drotar: parental consent, harmless tasks, but children may not understand withdrawal.
Experiments and questionnaires	Yokley and Glenwick (field experiment), Laba et al. (online survey), Riekert and Drotar (postal questionnaires).

Older syllabus content (2021–2023 questions only)

- **Bulpitt (1994)**: people taking drugs for high blood pressure focus on side effects (such as dry mouth, gout and, in men, impotence) rather than benefits (about **40%** fewer strokes and **44%** fewer heart problems), so many rationally stop.
- **Roth and Caron (1978)**: biochemical tests on patients taking antacids; patients said they took about **89%** of their doses, but tests showed about **47%**, and doctors' estimates were no better.

- **Sherman et al. (2000)**: 116 children with asthma; doctors estimated adherence from interviews, then researchers phoned the pharmacies to see how many **repeat prescriptions** were filled (pharmacy records were **92%** accurate). Adherence was between **38%** and **72%** for different drugs, and doctors could not tell which patients adhered.
- **Watt et al. (2003)**: the first Funhaler study (the same as Chaney et al. above).
- **Ley (1988)**: improving the practitioner's style (simple language, key points first, repeating, written instructions) improves understanding, memory and so adherence.

Key facts and formulas

There is no formula list in the 9990 exam. "Learn it" means you must remember it.

Fact	Status
Types of non-adherence: failure to follow treatment; failure to attend appointments. Problems: health worsens, wasted medicine, money and appointment slots, wrong decisions by doctors	Learn it
Rational non-adherence: a reasoned decision not to adhere after weighing the costs of treatment (side effects, price, regimen) against its benefits	Learn it
Laba et al. (2012): 161 Australian adults; online survey with hypothetical choices between two medicines; harms, benefits, cost and regimen affected choices; current harm weighed more than future harm; once a day preferred; uninsured people more sensitive to cost	Learn it
Health Belief Model: perceived susceptibility and severity give perceived threat; cues to action; perceived benefits against barriers; modifying factors; self-efficacy	Learn it
Measures: subjective (clinical and semi-structured interviews), objective (pill counting, medication dispensers such as TrackCap), biological (blood and urine samples)	Learn it
Adherence (%) = $\frac{\text{doses taken}}{\text{doses prescribed}} \times 100$	Learn it
Riekert and Drotar (1999): adolescents aged 11–18 with type 1 diabetes; 94 families approached, 14 did not consent, 52 returned postal questionnaires, 28 did not; returners adhered better	Learn it
Chung and Naya (2000): 57 asthma patients (47 finished), zafirlukast twice a day for 12 weeks, TrackCap and pill count every 3 weeks; 89% adherence by TrackCap, 92% by pill count	Learn it
Chaney et al. (2004): 32 Australian children aged 1.5–6 with asthma; usual spacer then Funhaler, two weeks each; home interviews and random phone calls; Funhaler improved adherence	Learn it
Behavioural techniques: contracts (signed agreement, goal, follow-up check), prompts (reminders), customising treatment (fit it to the patient's routine)	Learn it
Yokley and Glenwick (1984): field experiment; families randomly allocated to general prompt (195), specific prompt (190), increased access (185), monetary incentive (183), contact control (189), no-contact control (191); monetary incentive most effective	Learn it

Fact	Status
Yokley and Glenwick's three DVs: children receiving one or more inoculations, children attending the clinic, total inoculations	Learn it

How to do it

We have tagged 36 questions on this topic, from 2021 to 2026 (Papers 3 and 4; 26 different questions, as variants repeat them). 14 of them have parts of more than one type, so the counts add up to 61.

Question type	Questions
Recall details of a named study	12
Evaluate a research method or data source	11
Suggest a technique to improve adherence	8
Suggest ways to measure adherence, and their problems	6
Describe and evaluate essay	6
Explain why patients do not adhere	5
Plan a study and justify it	5
Evaluate a named study	3
"To what extent" essay	3
Explain an issue or debate with an adherence example	2

1. Recall details of a named study (12 questions)

Paper 4 Question 5 or 6 usually opens on one study and asks for exact facts, 1 mark each or 2 for a detailed one. Learn the aim, sample, procedure, results and conclusion of every study above.

- **Yokley and Glenwick's four experimental groups:** general prompt, specific prompt, increased access, monetary incentive, each with what it received (1 each). The two control groups earn **nothing** here.
- **Their dependent variables:** children with one or more inoculations, children attending the clinic for any reason, total inoculations; 2 marks need the detail ("children **receiving** one or more inoculations **at the clinic**"). "Number of parents taking children" earns nothing.
- **Their confounding problem and its fix:** children in one family could get different prompts (2); so families, not children, were allocated and each got one prompt, with random allocation to six groups (2).
- **Chaney et al.'s methodology:** matched questionnaires, two interviews at home by the same person, random phone calls about the previous day.
- **Riekert and Drotar:** a conclusion (returners adhered better; non-returners adhered less); how ethics cut the sample (14 families did not consent; 28 did not return the questionnaires, using their right to withdraw); why some were excluded (diabetes for under a year, another chronic illness, developmental delay).

Naming a guideline alone ("right to withdraw") earns nothing: link it to the study.

- **Chung and Naya:** sample, the drug and timing, the TrackCap, pill counts every 3 weeks, told they were monitored but not how.

2. Evaluate a research method or data source (11 questions)

Usually two points, 2 marks each: the point (1), then applied to adherence or the study (1). A point that fits any study gets only 1.

- **Postal questionnaires:** letters may not arrive or be read; people forget or put off replying; few are returned; postage and printing cost money. Apply it: "so data about whether children were immunised is lost". Strengths: time to think, privacy, no interviewer pressure. "It takes time" earns nothing.
- **Parents reporting on children:** the parent may not know if the child took the medicine properly; the parent may want to look good and say the child used the Funhaler when they did not; so the data are not valid. If told not to mention ethics, don't.
- **Ethical guideline with children:** young children can't give informed consent (the Chaney children were 1.5–6), so parents must; children may not understand or use the right to withdraw.
- **Objective data:** facts that can't be disputed (a child was inoculated or not), no researcher bias, quantitative so groups and trends can be compared.
- **Biological measures:** invasive (blood), embarrassing (urine), may be refused, costly, show only recent doses.
- **Field experiments:** natural setting (the letter arrives at home like any other), people don't know they are studied so behave naturally; but less control.
- **Why control groups:** to give a **baseline** for comparison (the no-contact group), and to show whether contact alone made a difference (the contact control). Apply it to this study for the second mark.
- **Studies on non-adherence in children** (older 5-mark "Discuss" version): 1 mark a point (advantages: behave naturally, don't question; disadvantages: may not understand instructions, can't explain, may not use the right to withdraw) and 1 for a **conclusion** that reaches a decision; a summary earns 0.

3. Suggest a technique to improve adherence (8 questions)

Paper 3 gives a short scenario: a doctor and their patients. Each suggestion: the technique (1) and how it would work **for these patients** (1). Without the context, marks are capped.

1. **Prompts:** two clearly different ones, such as a daily text at a set time ("Have you taken your morning tablet?") and a sticker on the box with the time to take it; or an alarm, a phone call, a mailed reminder, a pill organiser.
2. **Contracts:** what the contract says (a specific, agreed target such as one swimming class a week), that the patient **signs** it, and a **follow-up** to check it (every two weeks); a small realistic reward is fine (a free class after ten). Full marks need the follow-up. Don't explain **why** contracts work, and don't offer a large cash reward.

3. **A Health Belief Model leaflet:** link each item to a part of the model: the illness and its effects (severity, susceptibility), what the medicine does (benefits), side effects and how likely they are, clinic and pharmacy times and transport (barriers), a space for the patient's own dose and times (cue), large print for elderly readers. Avoid strong fear.
4. **Customising treatment:** tie the dose to a daily habit, a once-a-day version, a form the patient can manage.
5. **A practical problem** (part (b)): the patient says they did it when they didn't; the doctor has too many patients to follow up; patients miss the review visit. Give the problem, not a solution; "the patient won't sign" is not a problem with implementing it.
6. **Another health-promotion strategy** (Paper 4): providing information, fear arousal, TV adverts, schools, email or text, each with a detail of how; "by telephone" or "by post" earns nothing when the question rules them out.
7. **Why a technique is behavioural:** it uses **reinforcement**: the Funhaller's whistle and spinner reward correct use, so it is repeated.

4. Suggest ways to measure adherence, and their problems (6 questions)

Each way: name it (1), then how it shows adherence **in this scenario** (1).

- **TrackCap** on the bottle records each opening, so you can see whether it was opened once a day.
- **Pill count** at each visit: tablets left against tablets that should be left.
- **Repeat prescriptions** collected on time.
- **Clinical interview:** the doctor asks the patient how and when they take each pill.
- **Blood or urine test** for the drug or a marker (statins lower cholesterol), showing it is in the body.
- Not fMRI or any brain scan.

Problems: the bottle is opened but the pill not taken; pills are thrown away before a count; a prescription is collected but not used; the patient lies or forgets in an interview; a blood test misses the odd missed dose; there is no test for every drug.

What is an "objective measure": one based on fact that can't be disputed (1), with an example such as a drug found in a blood sample (1). A non-biological objective measure: pill counting or a TrackCap, or repeat prescriptions, with detail.

5. Describe and evaluate essay (6 questions)

Paper 3: (a) **describe** [6] (8 before 2024), (b) **evaluate** [10] with a **named issue**.

1. **(a):** cover **every** part the question names. "Explanations" means **both** rational non-adherence (with Laba et al. or another study) and the HBM, or (a) is capped at 4 out of 6. Give study detail: sample, procedure, at least one result.
2. **(b):** the **named issue first** (application to everyday life; individual and situational; self-reports; experiments), applied to the theories and studies from (a), then several more issues, each with detail, then a judgement. Use the evaluation lists and the issues table above.

3. **Subtopics set so far:** types and reasons with the HBM; explanations; measuring; improving. Stay on the subtopic: measures in an "improving" essay, or patient-practitioner communication in a "reasons" essay, earn nothing.

6. Explain why patients do not adhere (5 questions)

Each reason: name it (1) and explain it psychologically (1).

- **Rational non-adherence:** the patient weighs costs (side effects, price, effort) against benefits and decides the costs are higher. "The medicine costs too much" alone earns 1; say it is compared with the benefit.
- **HBM factors:** low perceived severity ("high blood pressure doesn't feel serious"), low susceptibility, high barriers, no cue to action.
- **For children:** they dislike the taste or the mask, are scared or bored, forget, or a parent gives up; frame it as a reason (a child decides the bad taste outweighs feeling better later).

7. Plan a study and justify it (5 questions)

Paper 4, with the research methods topic (see that note for the general method). The adherence part is the **psychological knowledge** behind the plan.

- **Since 2024:** (a) a plan [10] with the named features (such as closed questions and the sampling technique); (b)(i) describe the knowledge [4]; (b)(ii) how two features of it shaped the plan [4]; (c) reasons and a weakness for your choices, 2 marks each, applied to your plan.
- **Before 2024:** a design [10] and its psychological **and** methodological evidence [8]; only one kind caps it at 5, and describing a study earns at most 2: say how it shaped your design.
- **Good knowledge to use:** rational non-adherence and Laba et al.'s features (side effects, cost, how often) to write closed questions; the HBM's parts as the list of reasons for an age comparison; Chung and Naya's TrackCap and pill counts against blood or urine tests.
- **Choose a sensible method:** for "which reasons are most common in different age groups", a **questionnaire** where people pick their reasons works better than an experiment.

8. Evaluate a named study (3 questions)

6 marks, levels: two strengths or weaknesses each explained with detail **from the study** for 5–6. Use the evaluation lists above: for Chung and Naya, validity of the TrackCap (opened is not swallowed), small sample of one illness and drug, demand characteristics, not told how monitored. Make each weakness different; repeating the TrackCap's accuracy twice counts once. "Lacks ecological validity" is the wrong term for the opened-not-swallowed problem: call it **validity** of the measure.

9. "To what extent" essay (3 questions)

Old Paper 4, 12 marks, all evaluation: argue whether one measure (a repeat prescription, a biochemical test) is "the only accurate way" to know a person adhered.

- **For:** objective, factual, can't be faked (a drug in the blood was taken; a prescription is collected or not), no researcher bias; research support (Roth and Caron found self-reports far too high; Sherman et al. found pharmacy records accurate).
- **Against:** collecting a prescription or finding a drug doesn't prove every dose was taken (one pill before the test); tests are invasive, costly and exist only for some drugs; other objective measures exist (pill counts, TrackCap); self-reports explain **why**.
- End with a reasoned judgement, such as: objective measures are more accurate than self-reports, but no one measure is enough, so combine them. Don't describe the studies for their own sake: there are no marks for description.

10. Explain an issue or debate with an adherence example (2 questions)

(a) define the term (1) and link it to non-adherence (1); (b) a weakness or problem in context (2).

- **Idiographic:** studying the unique individual and their own experience (1); each patient weighs their own costs and benefits, such as side effects that affect them more than others (1). Weakness: it gives no general laws, so there is no single way to reduce non-adherence across patients. Don't describe the nomothetic approach instead.
- **Application to everyday life:** how useful something is in the real world (1); a blood test tells a doctor whether the patient really took the drug, so treatment can be changed (1). Naming a measure alone earns 0. Problem: patients lie or forget in interviews, and not every drug has a blood or urine test.

Worked examples

Example 1

Mrs Rahman, aged 70, has been prescribed one tablet every morning to lower her blood pressure. Her doctor is not sure she is taking it.

(a) Suggest **one subjective** and **one objective** way the doctor could find out whether Mrs Rahman takes her tablets. [4]

(b) Explain why the objective measure you suggested may be more valid than the subjective one. [2]

(c) Explain **one** problem with the objective measure you suggested. [2]

(a) Subjective: a semi-structured interview at her next appointment (**B1**). The doctor asks every patient the same set questions, such as "What time did you take yesterday's tablet?", then follows up her answers, for example asking whether she skips it on mornings she feels dizzy (**B1**).

Objective: a pill count (**B1**). The doctor gives her a box of 30 tablets and counts what is left two weeks later: after 14 mornings, 16 should remain (**B1**).

(b) A pill count records a fact instead of relying on what Mrs Rahman says (**B1**). In an interview she might forget the mornings she missed, or say she took them all so as not to disappoint her doctor, but the number of tablets in the box is not affected by her memory or her wish to look good (**B1**).

(c) She could throw tablets away, or give some to her husband, before the visit (**B1**). Fewer tablets would be left than she has really swallowed, so the count would make her look adherent when she is not (**B1**).

Example 2

From the key study by Yokley and Glenwick (1984):

(a) Describe what the **specific prompt** group and the **monetary incentive** group received. [4]

(b) Explain **one** strength of using clinic records to collect data in this study. [2]

(a) The specific prompt group received a letter that named their child (**B1**) and listed the particular inoculations the child needed, with the clinic's address and opening hours (**B1**). The monetary incentive group received the same specific letter (**B1**) plus a statement that children who attended would be entered into a lottery for cash prizes (\$175 in total) (**B1**).

(b) Clinic records are objective data (**B1**): a child either received an inoculation or did not, so the numbers are not affected by parents giving socially desirable answers about whether they took their child (**B1**).

Example 3

A physiotherapist finds that many of her patients recovering from knee operations don't do their home exercises.

(a) Suggest how she could use a **contract** to improve their adherence to the exercises. [4]

(b) Explain why a contract is a **behavioural** technique. [2]

(a) At the first session she agrees with each patient a specific goal, such as doing the three set exercises for ten minutes every morning (**B1**). They write this into a contract that also says the patient will tick off each day in an exercise diary (**B1**), and both the patient and the physiotherapist sign it (**B1**). Every two weeks the patient brings the diary to a review, where they check progress and set the next target, perhaps with a small reward such as a free extra session (**B1**).

(b) It targets what the patient **does**, not what they believe: the contract names a specific action to perform and the diary and review record whether it was done (**B1**). Keeping to it is **reinforced** by the physiotherapist's praise at each review and the small reward, so the exercise behaviour is more likely to be repeated (**B1**).

Example 4

(a) Describe what psychologists have discovered about improving adherence to medical advice, including community interventions. [6]

(b) Evaluate what psychologists have discovered about improving adherence to medical advice, including a discussion of the use of children in research. [10]

(a) Children. Chaney et al. (2004) tested the Funhaler with 32 Australian children aged 1.5 to 6 with asthma. Its whistle and spinner work when the child breathes out properly through it, which goes with the deep breathing that takes in the medicine, so correct use is rewarded. Each child used their usual spacer for two weeks and then the Funhaler for two weeks. Parents answered matched questionnaires in home interviews and were phoned at random to ask whether the child had taken the medicine the day before. With the Funhaler, 38% more parents had medicated their child the previous day and 60% more children took four or more breaths per dose.

Behavioural techniques. Contracts (a signed agreement with a goal and a follow-up check), prompts (reminders such as texts) and customising treatment (fitting it to the patient's routine) all change behaviour directly.

Community interventions. Yokley and Glenwick (1984) sent mailed prompts to families in a US city whose children aged 5 or under needed inoculations. Families were randomly allocated to six groups: general prompt, specific prompt, increased access (extra clinic hours), monetary incentive (a cash lottery), and two controls. Over three months, the monetary incentive raised inoculations most, then increased access, then the specific and general prompts.

Why it reaches the top level: a children's study, the behavioural techniques and the key study, each with procedure detail and a result.

(b) Use of children (the named issue). Chaney et al. studied very young children, who cannot give informed consent or understand the right to withdraw, so parents consented; the Funhaler was safe and helped their asthma, so it was ethical. Children so young can't report their own adherence, so the researchers relied on parents, who may not have known whether the child took the medicine properly or may have wanted to look like good parents, which weakens validity. Yokley and Glenwick avoided this: the children were not asked anything, and inoculations were recorded by the clinic.

Experiments. Yokley and Glenwick ran a field experiment: families received letters at home as normal mail and didn't know they were in a study, so behaviour was natural, and random allocation with two control groups shows the prompts caused the difference. Chaney et al. used repeated measures, which removes differences between children, but the Funhaler always came second, so novelty may explain part of the gain.

Generalisations. Thirty-two Australian children and one US city in the 1980s are narrow samples; a cash lottery may not work or be acceptable everywhere.

Application to everyday life. Both show cheap, practical changes: specific reminders and easier clinic hours, or a device that makes medicine fun. But the Funhaler teaches children to take medicine because it is fun, not because it matters, and a lottery is costly to run.

Overall, the research shows adherence **can** be improved with simple behavioural methods, and the key study's objective records make it the stronger evidence; but short time spans and parent reports mean we know less about lasting change.

Why it reaches the top level: the named issue first and in depth, applied to both studies; further issues with detail from (a); a reasoned judgement.

Common mistakes

- **Describing the control groups when asked for Yokley and Glenwick's four experimental groups:** they earn nothing; and know what **increased access** meant (extra clinic opening hours), which some candidates got wrong (March 2026 report).
- **Generic evaluation:** "people forget to return postal questionnaires" needs "so data about immunising children is lost" to get the second mark; a control-group answer that stops at "a baseline" needs the two control groups of this study (March 2026 report).
- **Explaining why contracts work** instead of suggesting how to use one, or offering an unrealistic reward such as £100; and "the patient won't sign" is not a problem with implementing a contract (March 2025 report).
- **Idiographic answers with no adherence link**, or describing the nomothetic approach instead (March 2025 report).
- **Reasons with no explanation:** "the cost of the medicine" earns 1 mark; say it is weighed against the benefit and found too high (November 2022 and June 2022 reports).
- **Riekert and Drotar:** saying children under 16 couldn't consent; in fact both parent and adolescent had to agree, and 14 families refused (November 2022 report). Many candidates couldn't give a conclusion: learn "returners adhered better than non-returners".
- **Chung and Naya:** only saying "they counted pills"; give the drug, timing, TrackCap and the 3-weekly counts. Don't repeat the TrackCap's accuracy as two weaknesses, and don't call it a lack of **ecological** validity (November 2022 report).
- **Answering the wrong subtopic:** describing measures in an "improving" essay, or reasons for non-adherence in a "measuring" essay, earns nothing (June 2021 and November 2021 reports); patient-practitioner communication is a different topic (March 2023 report).
- **The Funhaler study design:** it was **repeated measures** (each child used both devices), and adherence came from parents' reports, not from weighing the device or a biochemical test (June 2022 report).
- **Ignoring the model in the question:** a plan based on the HBM must use the HBM's reasons, not invented ones (November 2021 report); describing studies in a plan's justification earns at most 2 marks unless you say how they shaped the design (June 2023 report).
- **Describing instead of arguing** in "to what extent" questions: there are no marks for description (June 2022 and June 2023 reports).
- **Discussing children in general** when the question asks about **studies on non-adherence** in children (November 2021 report).

How to get the marks

- **"Identify", "give":** short and exact: the group's name, the DV, the reason for exclusion.

- **"Outline", "describe" a study:** specific details earn marks: 57 patients and 12 weeks, 1.5–6 years and two weeks per device, six groups and three DVs.
- **"Suggest"** in a scenario: two clearly different ideas, each with the technique or measure named and applied to these patients (the elderly, the exercise clinic, Camilla's father).
- **"Explain" a strength or weakness:** the point (1), then applied to the study or adherence (1). Two answers must be genuinely different.
- **"Evaluate" a named study** (6 marks): two points, each with an example from that study.
- **Essays:** (a) every part the question names, with study detail; (b) named issue first, issues applied to (a), then a judgement.
- **"To what extent"** and **"Discuss ... include a conclusion"**: both sides with research, then a decision reached by reasoning, not a summary.
- **Plans:** every feature the question names; knowledge from this topic that you then **use** in the plan.

Quick check

1. Name the **three** kinds of measure of non-adherence and give one example of each.
2. A patient told to take 3 tablets a day is given 90 tablets. After 28 days, 12 are left. What percentage of the prescribed doses did they take?
3. In Chung and Naya (2000), 57 patients started and 47 finished. What percentage finished, to one decimal place?
4. How many families were in Yokley and Glenwick's six groups altogether, and how many were in the four experimental groups?
5. Which part of the Health Belief Model is shown in each? (a) A man stops his tablets because they make him dizzy. (b) A woman starts taking her inhaler after a TV advert about asthma attacks. (c) A teenager thinks diabetes complications won't happen to him.

Answers

1. **Subjective:** a clinical or semi-structured interview. **Objective:** a pill count or a TrackCap. **Biological:** a blood or urine test.
2. Tablets taken = $90 - 12 = 78$; doses prescribed = $3 \times 28 = 84$; adherence = $\frac{78}{84} \times 100 = \mathbf{92.9\%}$.
3. $\frac{47}{57} \times 100 = \mathbf{82.5\%}$.
4. $195 + 190 + 185 + 183 + 189 + 191 = \mathbf{1133}$ families; experimental groups $195 + 190 + 185 + 183 = \mathbf{753}$.
5. (a) A **perceived barrier** (side effects). (b) A **cue to action** (external). (c) Low **perceived susceptibility**.

Past questions to try

- 9990/42/M/J/25 Q5: Yokley and Glenwick's dependent variables, another way to inform parents, strengths of objective data.
- 9990/42/F/M/24 Q5: confounding in Yokley and Glenwick and how it was avoided, another health-promotion strategy, field experiments.
- 9990/32/F/M/25 Q11: using a contract for an exercise programme, and a practical problem.
- 9990/32/M/J/24 Q9: a Health Belief Model leaflet for elderly patients.