

OLIVER ZOLMAN  
MD

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***How to choose which tests to track &  
lower my biological age, based on my  
annual budget & health risks***

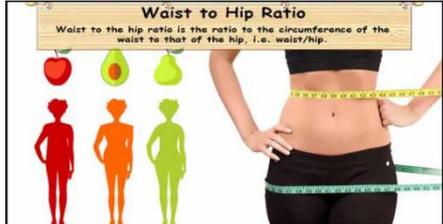
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**How do I decide which of these tests to get?**

The main factor is your budget you have available for tests per year

**I receive NO commission from any of these, have NO conflict of interest - these are deliberately not affiliate links or affiliate discount codes.**

I recommend you store all data in [www.sync.com](http://www.sync.com) cloud drive which enables easy sharing with us, alternatively Google Drive/Dropbox, etc, but [www.sync.com](http://www.sync.com) is likely more secure and private (and has good user experience)

Price	Name	Links	How to do it
<b>Free tests – Do every 3 months – everyone can do these</b>			
Free	Addenbrooke's cognitive assessment	<a href="#">Link</a>	Get a friend or your GP to go through the questionnaire with you
Free	Bleep exercise test	<a href="#">Link</a>	Follow the instructions in the link*, seek approval from your GP before doing this exercise test
Free	Body photos	N/a	Take photos of your face (no makeup, no facial hair (!)) and ideally all other body parts, e.g. skin/hair/nails etc. This includes DENTAL and GUM and TONGUE photo imaging!
Free	Health system screening	N/A	In the UK this generally includes 2D x ray mammography, cervical smear & HPV, abdominal aorta ultrasound and faecal immunochemical test for blood in the stool from colon disease
<b>One off purchases – Do every 3 months (Total £225) – everyone can do these</b>			
£30	Grip strength machine	<a href="#">Link UK</a>	Do 3 squeezes as hard as you can with each hand and record the highest reading from both hands
£80	Phone spirometer for lung function	<a href="#">Link UK</a>	make sure you have a compatible Android or iPhone to use it. Do 5 attempts and take the highest reading, make sure to put in your ethnicity, height and weight accurately too as this is needed to calculate your FEV1 accurately
£15	Scales for BMI calculation	<a href="#">Link UK</a>	Don't wear shoes or any heavy clothing items, ideally naked. Can get CE marked medical device scales for £100-£200 (e.g. this) but generally even the cheap scales are highly accurate.
£95	Omron Evolv Blood pressure cuff	<a href="#">Link UK</a>	Note this does not measure ambulatory blood pressure, which is a device you keep on your arm all day and does many readings (these cost £900 or so for good ones) See my blood pressure measurement checklist on how to measure blood pressure accurately
£4	Measuring tape for waist to hip ratio	<a href="#">Link UK</a>	 <p>Widest or smallest part of your waist, to the widest part of your hip over the hip bones</p>
<b>Basic Paid tests: Do annually if age 70+ or high risk, less frequently otherwise AND adapt based on personal highest risks*</b>			
<b>Total for all of these is £1000 per year.</b> If your budget is under £1000 per year, prioritise tests to what you are most likely to find problems with.			
£150 - £200 with code TAKE10 (NO affiliate)	PhenoAge blood panel + other useful tests	<a href="#">Link UK</a> (£200) Budget option <a href="#">Men UK</a> <a href="#">Women UK</a>	Must be VENOUS test NOT fingerprick ! Put the results into my <a href="#">PhenoAge calculator</a> to calculate your biological age. If you want to rank on the leaderboards you need this test minimum.  <b>Note we recommend doing this test twice per year if your budget allows</b>
£100	Carotid artery ultrasound	<a href="#">Link London UK</a>	carotid artery ultrasound scan with quantitative mean carotid intima media thickness (in millimeters), as well as blood flow velocities (in meters/second) (I recommend Vista Diagnostics ultrasound which is very cheap (£100 for ultrasound of any organ other than the heart)). Link to this . You can refer yourself (no GP required) and book online at that link.
£35	OCT eye scan + digital retinography	<a href="#">Link all of UK</a>	Ask the optician for your images, bring a USB stick or SD card as they often are clueless about how to email it
£200	Echocardiogram ultrasound	<a href="#">Link London UK</a>	resting transthoracic (across the chest) echocardiogram (ultrasound) of the heart with quantitative results for Left Ventricular Ejection Fraction (LVEF) (%), as well as examination and quantitative results on all 4 heart valves.
£150	48 hour ECG	<a href="#">Link London UK</a>	This is important for detecting early onset abnormal rhythms of the heart (arrhythmias), which are a sign of aging damage to the heart.
£75	Ambulatory blood pressure	<a href="#">Link London UK</a>	Measures blood pressure (BP) continuously for 24 hours, which is more accurate than one offs
£65	DEXA bone scan	<a href="#">Link London UK</a>	DEXA bone mineral density scan (it's a low dose x ray, take radioprotectant supplements in advance)
£200	WatchPAT sleep test	<a href="#">Link all of UK</a>	Accurately shows aging of the sleep system: total sleep time, snoring, sleep apnea, time awake

## ADVANCED Paid tests:

**Do annually if age 70+ or high risk, less frequently otherwise AND adapt based on personal highest risks\***

### Total for all of these is an additional £7000 per year.

If your budget is under £7000 per year, prioritise tests to what you are most likely to find problems with.

£400	Ultrasound of thyroid, neck, abdo, pelvis, legs with ABPI	<a href="#">All of UK link</a>	This provides basic anatomical information that can help more accurately measure biological age of these organs. ABPI = ankle brachial systolic blood pressure index. It helps identify the biological age of the arteries in your legs.
£200 per area (up to £3200 for all 16 areas)	Standard 3 Tesla (3T) MRI	<a href="#">Link London UK</a>	Allows biological age of organs to be calculated through direct visualisation of the organ. MRA (MRI of arteries) and MRV (MRI of veins) allow for clots to be visualised. Avoid contrast as the gadolinium contrast used builds up in the organs in your body displaying toxic effects. The 10 areas: 1) head, 2) neck 3) whole body MRA, 4) whole body MRV, 5) heart 6) lungs, 7) liver 8) biliary tree (magnetic resonance cholangiopancreatography) – use new MRCP+ quantitative scan ideally 9) pancreas, kidneys, spleen, gut (abdo), 10) pelvis (bladder, ureter, urethra, womb, ovaries, testes) 11) upper limb, 12) hand, 13) hip, 14) lower limb, 15) foot, 16) breast
£60 extra	NeuroQuant MRI	<a href="#">Link global</a>	Speak to your MRI technician to set up the MRI scanner software for this in advance. This is an extra software that allows you to measure brain regions quantitatively on MRI head scans. This allows you to calculate the biological age of different brain regions accurately.
£60 extra	LestionQuant MRI	<a href="#">Link global</a>	Speak to your MRI technician to set up the MRI scanner software for this in advance. This is an extra software that allows you to measure white matter damage to the brain MRI head scans. This allows you to calculate the biological age of different brain regions accurately.
£300 per area	Additional scan 3T MRI	Ask radiologist	Adding STIR (Short T1 inversion recovery ), FLAIR (Fluid attenuated inversion recovery), SWI (susceptibility weighted imaging) and DWI (diffusion weighted imaging) can provide further details about the biological age of organs, but these take more time on the scanner so cost more.
£2000	Cancer full body DWI MRI	25 Harley Street	Allows early detection of various cancers where early detection improves outcomes.
£200-£550	Liver MultiScan MRI	<a href="#">Nottingham UK</a>	Does a special T1 (cT1), T2 (T2*) and PDFF (proton density fat fraction) of your liver to identify inflammation, fat and iron in the liver, which allows calculation of your liver's biological age.
£325	FibroScan Liver Ultrasound	Ask private GP	Measures the fibrosis % of your liver, allowing calculation of your liver's biological age.
£1000-£2000	Sigmoid-or-colonoscopy	Ask private GP	This allows checking for polyps/cancer, diverticular disease, microscopic colitis etc, the extent of which help determine colon biological age – REQUEST A VIDEO to allow for assessment afterwards
£500 - £1500	Polysomnography study	Ask private GP	This allows assessing all sleep markers that can change with age, not all of which can be done with WatchPAT,
£20	Cystatin-C	Ask a private GP	Better marker of biological age of the kidney compared to creatinine
£40	BNP & high sensitivity troponin I or troponin T	Ask a private GP	These are markers of heart aging and can help calculate heart biological age alongside echocardiogram, ECG, heart MRI
£20	PSA	Ask a private GP	Measures biological age of the prostate in men (not really relevant in women)
£20	CA-125	Ask a private GP	May pick up ovarian damage or aged ovaries in women (and helps guide DWI/SWI sequence 3 Tesla MRI and transvaginal ultrasound follow on imaging
£150	Inflammaging panel	Ask a private GP	TNF-alpha, IL-6, IL-1, IL-1b shows levels of inflammaging and whole body senescent cell load
£100	Further cardiac risk panel	Ask a private GP	APOB/APOA100, Lp(a), PLA-2, Ox-LDL can help identify cardiac risk more accurately.
£200	Bowel inflammation panel	Biolab	Butyrate, calprotectin, can help assess bowel damage risk more accurately & iterate diet etc.
£20	Lipase and amylase	Ask a private GP	Pancreatic damage markers that can warrant further investigation

### Biological age optimisation tests – Do Annually

**These tests don't help you measure your biological age, but help to implement changes that then help slow/reduce aging**

£450	Biolab Extended Health Risk Profile PLUS alpha-carotene and CoQ10	<a href="#">Link all of UK</a>	This covers most of the vitamins and minerals and essential nutrients that aren't normally measured (normally only Vitamin D, B12 and B9 (folate) are measured). Moving all these results to the optimal range for slowing aging is easy to do through diet and supplement changes.
Varied	Heavy metal blood, urine, hair tests	TBC	Shows whether you have excess levels of heavy metals in your body and whether to undergo chelation therapy to remove them, and what type and extent of chelation therapy.
£20 - £120	IGF-1	Ask a private GP	Shows whether you are eating too much or too few mTOR boosting amino acids or proteins, is a surrogate marker of mTOR activity, too high or low raises all cause, cancer, cardiovascular mortality.

Free - £200	STD tests	Local sex clinic	If sexually active, early diagnosis has better outcomes and prevents spread
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**3 monthly – Advanced one-off costs**  
**These can make sense if you have a particular interest or high budget**

**Total for all of these is an additional £7000 per year.**  
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£300	New Oura ring	<a href="http://www.oura.com">www.oura.com</a>	This measures HRV (heart rate variability) for 5 minute intervals at night – a very accurate measure of HRV and validated against ECG gold standard. This is a convenient way of tracking whether interventions you do can increase HRV, as HRV decreases a little bit with age.
£2000	Home gold-standard EEG	Contact me	Can be cheaper and more convenient than doing paid for full EEG sleep studies, helps optimise sleep markers that can't be measured by WatchPat or the Whoop Band (Whoop Band measures total sleep time accurately only)
£800	Home ABPM machine	Contact me	Can be cheaper if doing e.g. monthly or quarterly ABPM, as normally costs £75 to rent a machine
£1000	Home 12 lead wireless ECG	Contact me	May make sense to pick up high risk cardiovascular conditions or to optimise ECG results in some

## How to reduce risks of blood tests

Ideally, all blood tests should be done in the same draw to minimise damage to veins. Infrared vein location devices (£500- £1000) or newer generation touniquets (only available in bulk typically) or low tissue damage BD ultratouch butterfly needles (only available in bulk typically) can be used to reduce the chance of needing more than 1 attempt to draw blood and damaging veins.

Clinical grade manuka honey can be used after blood draws to aid aseptic skin healing ([this link from Amazon](#) - lasts for ages)