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The Central Role of Absorbent Hygiene Products in the Management of Adult Urinary Incontinence:

Benefits, Costs and Environmental Impact



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List of Abbreviations

ABBREVIATION	DEFINITION
5-ARI	5-alpha reductase inhibitor
AD	Anaerobic digestion
AHP	Absorbent hygiene product
BPH	Benign prostatic hyperplasia
CAPS	Continence Aids Payment Scheme
CO_2	Carbon dioxide
DoEaSA	Department of Economic and Social Affairs (United Nations)
EAU	European Association of Urology
EDANA	The voice of nonwovens
IAD	Incontinence-associated dermatitis
ICUD	International Consultation on Urological Diseases
ICS	International Continence Society
ICI	International Consultation on Incontinence
IDF	International Diabetes Federation
LCA	Life-cycle assessment
LMIC	Low- and Middle-Income Country
LUTS	Lower urinary tract symptoms
MSW	Municipal solid waste
MUS	Midurethral sling
NHS	National Health Service
NICE	National Institute for health and Care Excellence
NGO	Non-governmental organisation
OAB	Overactive bladder
PFMT	Pelvic floor muscle training
POP	Pelvic organ prolapse
SAP	Superabsorbent polymer
SDGs	Sustainable Development Goals
SUI	Stress urinary incontinence
UUI	Urgency urinary incontinence
UI	Urinary incontinence
UN	United Nations
WHO	World Health Organization

Executive summary

Urinary incontinence (UI) is a widely prevalent condition affecting individuals of all ages, with a higher incidence among older adults. As populations age and lifestyle-related risk factors such as obesity and reduced physical activity increase, the number of people experiencing UI is expected to grow. Despite its widespread occurrence, many individuals do not seek medical advice due to stigma or because they perceive their symptoms as manageable without clinical intervention. Treatments such as pelvic floor exercises, medications, and surgical options can alleviate symptoms or even cure in a proportion of cases, but a significant number of individuals continue to require daily management.

Continence products are medical devices that play an important role in UI management, providing individuals with a practical and effective means of maintaining their quality of life, social participation, and workforce engagement. AHPs enable individuals to remain active, minimising the risk of social isolation and psychological distress associated with UI. Additionally, for older adults and those with limited mobility good continence care, including the use of well-designed AHPs, help prevent secondary complications such as incontinence-associated dermatitis (IAD) and pressure ulcers. While AHPs represent a necessary expenditure for individuals and public health systems, they also contribute to economic benefits by supporting workforce participation and reducing healthcare burdens associated with unmanaged UI. Many countries recognise their value by providing reimbursement schemes to facilitate access.

The AHP industry has consistently innovated to improve product performance while minimising environmental impact. Advances in material science have led to lighter, more absorbent products that enhance comfort and skin protection. Digital technologies, including smart sensors, are now being integrated into AHPs to optimise product use, reducing unnecessary consumption and the consequent waste. However, while reusable products may appear to offer sustainability advantages with respect to disposal, they are not as readily accepted as disposable products by people with UI. Life-cycle assessments (LCAs) indicate that disposal is not the only factor to take into account in a comparative assessment. How the product is used, its performance and the ability to adapt to users' needs, all have a significant impact on environmental sustainability.

Disposal and waste management remain challenges for the AHP sector. Most used products are currently disposed of through municipal waste systems, where the best solution is incineration with energy recovery. The recycling infrastructure for AHPs is non existent in most markets and is only at the early stages in a small number of countries. The industry has therefore been working with the disposal sector to explore sustainable end-of-life solutions, including mechanical separation and chemical recycling. However, despite extensive work, satisfactory solutions have yet to be developed and implemented. Collaboration between AHP manufacturers, policymakers, and waste management providers will be essential to developing effective disposal strategies that balance environmental considerations with product performance and user needs.

This report examines the prevalence of UI, its impact on individuals and healthcare systems, and the role of AHPs in supporting those affected. It also explores industry efforts to improve sustainability while maintaining high product standards. A coordinated approach across healthcare, public policy, and industry is necessary to ensure UI management remains effective, accessible, and environmentally responsible.

Introduction

As populations around the world continue to age, urinary incontinence (UI) is emerging as an increasingly common concern. Recent estimates indicate that older adults represent the fastest-growing demographic globally, leading to a higher incidence of conditions such as UI. Many cases of UI cannot be fully cured, especially in older individuals or those with multiple health issues, underscoring the need for effective, long term management strategies.

Continence products are regulated as medical devices and are made to the highest performance standards. They are designed specifically to address the medical condition of urinary incontinence and represent one of the most practical methods for managing the condition in both the clinical and community settings. Other absorbent products such as menstrual pads or tissue might be used by people with UI, but these products are not specifically designed to handle urine loss. In this report the term 'AHP' will be used to refer to purpose made products specifically designed to address adult UI.

AHPs improve users' quality of life by helping them maintain dignity, mobility, and both financial and social independence.

However, they involve significant costs and raise environmental questions related to manufacturing, waste, and disposal. These considerations have prompted renewed scrutiny of AHPs' affordability and environmental footprint, but they remain a vital resource for those who require daily symptom control.

This report examines the complexities surrounding UI and the role of AHPs. It explores the rising prevalence of UI, the potential strain on healthcare systems, and the cost and environmental concerns that have led some to question the sustainability of disposable products. Ultimately, the evidence presented will highlight how AHPs continue to serve as a key management tool, offering clinical, practical and economic value, even in the face of challenges related to expenditure and the environmental impact of product use and disposal.

Urinary incontinence is a complex condition

Urinary incontinence exists in three main forms: urge, stress and mixed

The different types of urinary incontinence (UI) are categorised by the International Consultation on Incontinence (ICI) as set out in Table 1.[1]

UI is defined as the involuntary leakage of urine and can be categorised into different types based on its cause. The most common form in women, stress urinary incontinence (SUI), occurs when physical activities such as coughing, laughing, or exercise put pressure on the bladder, leading to leakage. This is often due to weakened pelvic floor muscles, commonly seen in women after childbirth. Urgency urinary incontinence (UUI) is associated with a sudden and overwhelming need to urinate, which may result in leakage before reaching the toilet. This type is often linked to overactivity of the detrusor bladder muscle and is more common in men and older adults of both sexes. Mixed urinary incontinence (MUI) is a combination of both stress and urgency symptoms. Other forms of UI are less common, with functional incontinence more prevalent among the elderly and less mobile. This type of UI is not caused by bladder dysfunction but rather by physical or cognitive impairments that make it difficult for an individual to reach the toilet in time.

TABLE 1 ⇒ **Categories of Urinary Incontinence**

TYPE	DESCRIPTION
Stress	On effort or physical exertion e.g., sporting activities, or on sneezing or coughing
Urgency	Associated with urgency
Mixed	Associated with urgency and also with effort or physical exertion or on sneezing or coughing
Postural	Change of body position, for example, rising from a seated or lying position
Associated with chronic retention	In conditions where the bladder does not empty completely as indicated by a significantly high residual urine volume and/or a non-painful bladder which remains palpable after the individual has passed urine
Nocturnal enuresis	Complaint of involuntary loss of urine which occurs during sleep
Continuous	Continuous involuntary loss of urine
Insensible	The individual is unaware of how it occurred
Coital incontinence (for women only)	Involuntary loss of urine with coitus
Functional	Results from an inability to reach the toilet due to cognitive, functional or mobility impairments in the presence of an intact lower urinary tract system
Multifactorial	Related to multiple interacting risk factors, including factors both within and outside the lower urinary tract such as comorbidity, medication, age-related physiological changes and environmental factors

SOURCE: Cardozo 2023, p400[1]

People with urinary incontinence are a large, diverse group

The prevalence of UI varies widely due to differences in definitions, survey methods, and population demographics. One of the international studies conducted according to the most rigorous methodology, the EPIC study, involved a survey in a random sample of men and women aged 18 yrs or over who were representative of the general populations in five countries (Canada, Germany, Italy, Sweden, and the United Kingdom) using telephone interviews.[2] Using the 2002 ICS definition of UI as 'any involuntary loss of urine', they reported that 5.4% of men and 13.1% of women experienced UI. Other studies suggest higher levels of UI, with between 25% and 45% of women and 5% to 32% of men experiencing some form of UI. However, these figures vary significantly between studies (International Consultation on Incontinence, Committee 1, Sections IV.2 and V.2).[1]

One of the key challenges in determining the true prevalence of UI is the lack of a standardised definition across studies. Some surveys classify any involuntary urine loss as incontinence, while others require symptoms to be frequent or bothersome to be counted. Different studies ask respondents to recall their experiences over different timeframes, which can lead to substantial differences in findings. Some surveys inquire about any urine leakage in the last week, while others use longer recall periods such as the past month, the past year, or even 'ever' having experienced incontinence.

Additionally, survey methodology plays a major role in prevalence estimates. Studies using self-reported questionnaires often yield higher prevalence rates compared to those based on clinical diagnoses. Telephone interviews, online surveys, and face-to-face assessments each introduce different biases, affecting the accuracy of reported figures.

Another significant issue is the age range of study populations. Many studies focus only on older adults, where UI is more prevalent, leading to higher reported rates, while others include younger populations with lower rates, reducing overall prevalence estimates. The social stigma associated with UI also contributes to underreporting, particularly among men and younger individuals. In some cultures, discussing urinary symptoms is considered taboo, leading to further underestimation of true prevalence.

The majority of prevalence studies are conducted in the community setting. Prevalence of UI is considerably higher in residential care, where physical and cognitive impairments were significant predictors.[3] Surveys of continence status among older individuals living in nursing homes have been conducted in the US, where 49.6% of more than 2 million residents were found to have UI, with higher levels found in Norway (72%) and Japan (66.9%).[4/5]

UI has also been found to be a predictor of institutionalisation in community-dwelling older population as well as those in assisted living.[6/7]

Urinary incontinence has many causes

The development of UI is influenced by a combination of physiological, lifestyle, and demographic factors.[1] While the prevalence increases with age, UI is not an inevitable consequence of ageing, as other risk factors often contribute more directly to its onset.

Obesity is a well-established risk factor for UI, particularly stress incontinence, due to increased intra-abdominal pressure. Metabolic syndrome, commonly associated with obesity, is also linked to urgency incontinence. Studies suggest that even moderate weight loss can improve symptoms, reinforcing the association between body weight and UI.

Pregnancy and childbirth, especially vaginal delivery, are major contributors to UI in women, with multiple pregnancies further increasing risk. However, pregnancy itself can also trigger

temporary stress incontinence. In men, prostate-related conditions, including benign prostatic hyperplasia (BPH) and post-prostatectomy complications, are significant causes, particularly of urgency incontinence.

Hormonal changes, particularly during menopause, influence UI in women, with some studies indicating a peak around this time. However, hormone replacement therapy, particularly oral oestrogen, has been shown to increase risk rather than alleviate symptoms. In both men and women, pelvic surgery has been associated with a higher likelihood of developing incontinence, although the mechanism remains unclear.

Chronic conditions, including diabetes and cardiovascular disease, play a role in UI across both sexes. Diabetes-related nerve dysfunction can impair bladder control, while cardiovascular disease and associated medications, notably diuretics, may contribute to symptoms. Neurological conditions such as dementia increase risk by affecting bladder signalling and mobility.

Lifestyle factors, including smoking and high-impact physical activity, have been inconsistently linked to UI. In contrast, mobility impairments, arthritis, and cognitive decline have a more established association, particularly in older individuals.

In the frail elderly UI is typically the result of several risk factors acting together – age-related physiological changes, the effect of other health problems, multiple medications, reduced mobility and cognitive impairment.[1]

People experience urinary incontinence in varying ways

People with UI experience loss of urine at varying frequency, ranging from rare instances to multiple daily episodes.[8/9] The severity of urinary incontinence varies significantly, ranging from occasional minor leaks to complete loss of bladder control. Mild cases may involve occasional dribbling with specific activities, while severe cases can significantly impact daily life, leading to frequent and large-volume leakage.

Stress incontinence, often seen in females with a history of pelvic floor weakening or pelvic surgery, usually leads to smaller losses of around 5–20 ml. This type of leakage typically happens when coughing, sneezing, or exercising causes a sudden rise in abdominal pressure.

By contrast, urge incontinence, which can occur in both males and females, can result in moderate to large losses of 20–200 ml or sometimes the entire bladder contents. This usually happens during a sudden, powerful urge to urinate, leaving limited time to reach the toilet.

There is considerable variability in how individuals experience the same level of UI, with the degree of 'bothersomeness' not necessarily linked to the severity. Many individuals do not seek medical attention due to embarrassment, a preparedness to live with the condition, or the misconception that UI is an inevitable part of ageing.

Urinary incontinence has a major impact on society

The population of people with urinary incontinence will grow as the population ages

The prevalence of urinary incontinence (UI) is anticipated to rise significantly over the coming years, driven by demographic changes, lifestyle factors, and increasing chronic disease prevalence. Both global and national projections indicate substantial growth in the number of people affected by UI, with health systems needing to prepare for greater demand in continence care and associated services.

The authors of the EPIC study estimated that 8.2% of the 2008 worldwide population of adults ≥20 years old was affected by UI and that this percentage would increase to 8.5% by 2018.[10] With the global population of adults ≥20 years old estimated at 5.47 billion in 2024 and using the 8.5% prevalence figure, approximately 465 million adults ≥20 years old worldwide are believed currently to experience UI.[11]

However, a major factor contributing to the increase in UI cases is ageing populations worldwide. According to the United Nations, the number of older people is growing fast, with the population of those 65 years or older having tripled from around 260 million in 1980 to 761 million in 2021. By 2030, the number is projected to exceed 1 billion and to reach over 1.6 billion in 2050.[12]

Between 2021 and 2050, the population aged 65 and over in Eastern and South-Eastern Asia, as well as Central and Southern Asia, is expected to increase by more than 540 million, making up over 60 per cent of the global rise. Over the next 30 years, Northern Africa, Western Asia, and sub-Saharan Africa are projected to experience the fastest growth rate in the population aged 65 and above.

Given that UI prevalence is highest among older adults, the global burden of UI is expected to grow accordingly. In Australia, a report from the Continence Foundation of Australia, developed by Deloitte, projects that the number of people with UI in Australia will rise by 19.4% between 2023 and 2032, reaching 8.6 million. This increase is largely due to the ageing population, with 70.9% of residential aged care residents experiencing some form of incontinence.[13]

Obesity is a well-established risk factor for UI, particularly for stress urinary incontinence. The World Obesity Federation predicts that by 2035, 1.53 billion adults worldwide will be living with obesity. 79% of adults with overweight and obesity will live in Low- and Middle-Income Countries (LMICs) by 2035. The Federation predicts that the prevalence of overweight and obesity in the WHO European region will increase from 66% in 2025 to 71% in 2035, with the number of adults affected rising from 213 million to 263 million. In the WHO Americas region the corresponding figures are 71% rising to 77%, with the numbers of adults increasing from 293 million to 395 million.[14]

Chronic conditions such as diabetes, cardiovascular disease, and neurological disorders significantly contribute to UI risk. Diabetes, in particular, affects bladder function and increases incontinence risk. The global diabetes prevalence

is projected to increase from 537 million cases in 2021 to 783 million by 2045, with much of this growth occurring in Asia and Africa.[15] Given the link between diabetes and UI, prevalence of UI is expected to rise in these regions.

Other factors such as smoking, physical inactivity, and high caffeine intake contribute to UI. As urbanisation and lifestyle changes accelerate in developing economies, these risk factors may become more widespread, further increasing UI prevalence. Additionally, increasing awareness and healthcare access may lead to higher diagnosis rates, contributing to an observed increase in prevalence.

The convergence of population ageing, rising obesity rates, and increasing chronic disease prevalence is expected to drive a significant rise in UI cases worldwide, beyond the 465 million projection from the extrapolated 2008 calculations referred to earlier. Regions experiencing rapid demographic transitions, such as Europe, North America, and Asia, will see the most pronounced increases.

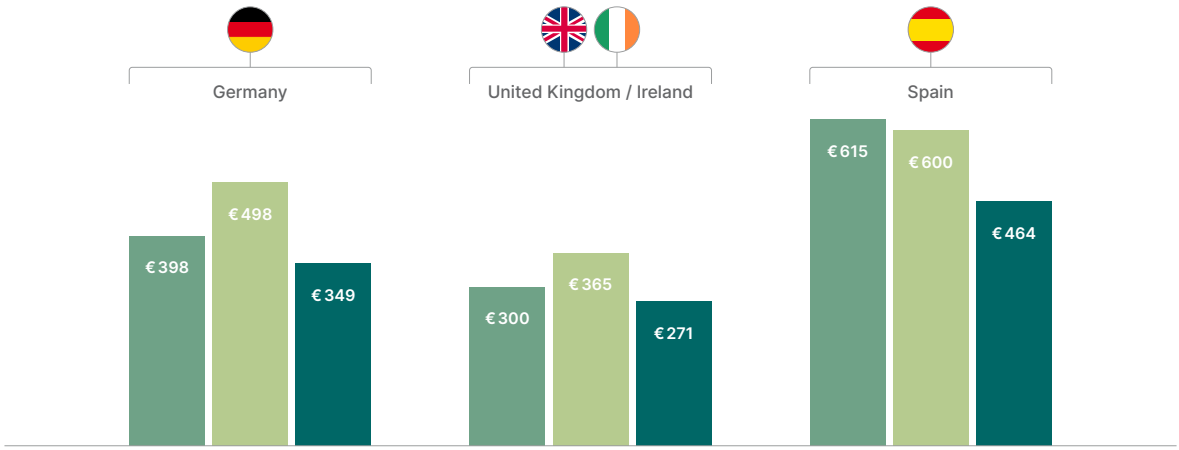
Urinary incontinence brings high costs both to society and to the individual

Studies investigating the cost of UI at a population level are infrequent, partly due to the difficulties in obtaining reliable estimates of the prevalence of the condition. They also vary considerably in what elements of continence care are included in the analyses. At the most restrictive, studies may only include the cost of products used. Others include medicines, carer costs and medical visits. The broadest include productivity lost at work and the impact on society. The latter studies demonstrate that UI costs the healthcare system a significant amount of money.

In 2023, the Continence Foundation of Australia calculated that managing UI cost the Australian Health System AU$2.6 billion dollars for hospital and primary care, plus a further AU$1.2 billion in formal home care, residential aged care and incontinence aids and materials.[13] The resulting AU$3.8 billion in public money spent on UI represented 1.5% of the AU$252 billion total public expenditure on health in 2023.[16]



FIGURE 1 ⇒ **Direct annual per capita costs of urinary incontinence management**



Direct costs, mean per capita: UI medication, conservative treatment, health care provider visits, diagnostics, incontinence products.
Study population: treatment-seeking women >18 years

UUI MUI SUI

The Continence Foundation went on to look more broadly than healthcare costs and assessed the productivity impact of UI on Australia. Lower than average employment rates for those living with UI, combined with higher than average absenteeism and lower than average productivity at work added a further AU$53.9 billion cost on the Australian economy.

In 2014, a study into the costs of urge UI in the USA calculated the total national cost of managing the condition in 2007 as $65.9 billion, made up of $49.1 billion direct medical costs, $2.3 billion direct nonmedical costs, and $14.6 billion indirect costs.[17] The total cost of UI is higher, once stress UI and mixed UI are included.

Productivity losses that make up part of the indirect costs have also been estimated in the USA, where employees with urge UI had 47% greater total absence costs and 63% more absence days than employees without UUI in 2014, representing a significant economic burden on their employers.[18]

While UI incurs costs for the healthcare system it also adds costs to the individual, both in terms of the impact on their quality of life and on their financial health. A US study in older women found that daily UI was associated with often feeling isolated and increased loneliness. Women with daily UI had increased depressive symptoms, increased anxiety and decreased self-report of overall health compared with continent women.[19]

With respect to the economic cost, many people with UI do not visit a healthcare professional. While AHPs are reimbursed by public health payers, those who manage their UI on their own are not reimbursed the costs of their AHPs. Figure 1 sets out the mean annual per capita direct cost of UI treatment calculated in a 2005 study for four European countries, including the costs of medication, medical visits and incontinence products.[20]

A 2007 study in the US (Table 2) looked at a narrower range of costs, including only pads and the consequences of leaks and showed lower levels of expenditure than those seen in Europe.[21]

TABLE 2 ⇒ **Direct annual per capita costs of urinary incontinence management in the USA**

UUI	MUI	SUI
$313	$330	$203

Direct costs: routine care (pads, laundry, dry cleaning, other)
Study population: community-dwelling women aged 40 69 years with at least weekly UUI, MUI, or SUI

People with urinary incontinence manage their condition in a variety of ways

Many people manage their own urinary incontinence

Studies across several countries have shown that a minority of people with UI seek professional help: 17% of women with UI in the UK, 29% in Denmark and 34% in the US discussed their symptoms with a clinician.22,23,24 A 2024 systematic review found the main barriers to seeking help to be stigma resulting from a combination of embarrassment, shame, and taboo, as well as a lack of knowledge about the condition and women feeling 'trivialised' by clinicians.[25] Others may consider UI to be a normal part of ageing which cannot be addressed medically. The type of UI, its severity and the impact it has on quality of life also determine whether women seek clinical help.[26]

Individuals experiencing very mild or occasional UI may not feel the need to seek medical assistance. Some who do consult a health care professional find that understanding the causes and implementing self-care strategies are adequate. A Danish study indicated that simple information and advice were sufficient treatment for 23% of women attending an open-access incontinence clinic.27 Similarly, a Swedish study found that of 136 women with UI offered treatment only 24% decided to initiate it.[28]

Those who do not choose to consult a healthcare professional for their UI manage their incontinence in a variety of ways, with the majority using AHPs. A national information campaign through Hungarian general practitioners identified 110,752 adults with UI who had not previously sought help for their condition: 55% of these were using AHPs.[29]

For those who do choose to consult a doctor, communicating UI symptoms may not always lead to assistance. Some patients report that physicians either ignore their symptoms or offer dismissive explanations, leading to the perception that no treatment options are available. In a study on UI management in general practice, 30% of women who informed their doctor about their symptoms felt they were not offered help. This may be due to a lack of confidence among primary healthcare providers in managing UI, contributing to its undertreatment.[1]

Urinary incontinence is managed in a stepwise manner

A number of medical bodies such as the International Consultation on Incontinence (ICI, Committees 8-12, 14, 19) and the European Association for Urology (EAU) set out recommendations for the management of UI, dividing them into initial management and specialised management, and considering them separately for men and women.[1/30/31] In addition to a general and a urinary symptom assessment, the ICI recommendations propose a physical examination and urinalysis, and an assessment of the patient's quality of life and wish for treatment.

Depending on whether the UI has stress or urge components, the physician is recommended to discuss management options including lifestyle interventions such as reducing caffeine intake, smoking cessation and weight reduction, behavioural interventions including bladder training and scheduled voiding, or medicines including antimuscarinics for urgency

incontinence. Referrals may be made to specialists, who may be physiotherapists, nurses or clinicians for pelvic floor muscle training or tibial nerve stimulation.

Before these interventions have an effect, the ICI recommends considering appropriate use of continence products. A systematic review of studies on primary care practitioner management of people with UI found that up to 66% of patients were offered containment products, while 5-37% were referred to medical specialists. Up to 27% were referred to urologists, 25% to gynaecologists and 12% to urogynaecologists.[32]

Management of the frail elderly, particularly those in residential care, differs from the approach in the community setting. Initial investigation will be similar to that described above, and conservative management such as bladder training and scheduled voiding may be followed. Those residents with mobility and/or cognition problems causing 'functional incontinence' need support with toileting. But where this is not effective, then a combination of toileting and containment strategy is needed, with AHPs being the most common solution for containment.

Medical treatment can cure only a proportion of those treated

Specialised management of urinary incontinence depends on the sex of the patient and the type of incontinence. If conservative treatment for stress urinary incontinence is unsuccessful, women may receive surgery, including bulking agents, tapes and slings, or colposuspension, while men may undergo surgery for an artificial sphincter or male sling.

Midurethral slings (MUS) have been widely used for SUI in women since the mid-1990s. However, from 2008 reports of surgical complications led to warnings about the use of transvaginal mesh for the repair of pelvic organ prolapse (POP). Negative patient experiences were taken up by the media, leading to the European Commission reporting in 2015 that 'synthetic sling SUI surgery is an accepted procedure with proven efficacy and safety in the majority of patients with moderate to severe SUI when used by an experienced and appropriately trained surgeon'.[33] But the negative perception of the procedure was such that MUS use was discontinued in the UK in 2018, not only for POP but also for SUI. Significant reduction of use for SUI has also been seen in France and other countries.[34/35] Due to continuing controversy on using mesh, in 2021 the Society of Urodynamics and Female Pelvic Medicine and Urogenital Reconstruction (SUFU) and the American Urogynecologic Society (AUGS) issued a joint statement supporting the use of mesh in MUS for women with SUI when the procedure is conducted by experienced surgeons.[36/37]

Urgency incontinence is most commonly treated with antimuscarinic drugs, beta 3 agonists or a-blockers with 5-alpha reductase inhibitors (5-ARIs) for men with outlet obstruction. If initial therapy fails, then botulinum toxin or sacral nerve stimulation may be used.

These treatments have variable rates of success. For stress UI a systematic review found supervised PFMT in women to be successful in 58.8% at 12 months, and in 78% of men at 6 months. Treatment with injectable bulking agents showed cure rates of up to 36.9% at 12 months. Surgical interventions for women were successful at 12 months in 84.4%, although changes to surgical practice resulting from the complications associated with MUS may have affected this number. Male slings achieved a lower median cure rate of 53%. Treatment for urge UI is primarily pharmacological, with the median cure rate for antimuscarinics being 49%, and for mirabegron being up to 45.8% at 12 months. Sacral neuromodulation was successful in 15% of women at 5 years. The longest follow up period reported for onabotulinum toxin A was 6 months, when success was achieved in 31.1%.[38]

These figures show the challenges presented in managing UI and demonstrate how, even in those

receiving specialist treatment, a large number cannot be cured and rely on AHPs to maintain an active life.

Many people with urinary incontinence rely on AHPs

It is helpful to consider how the figures presented above would apply to a typical population. Figure 2 illustrates the numbers of people in a population of one million adults who are estimated to rely on AHPs to manage their UI.

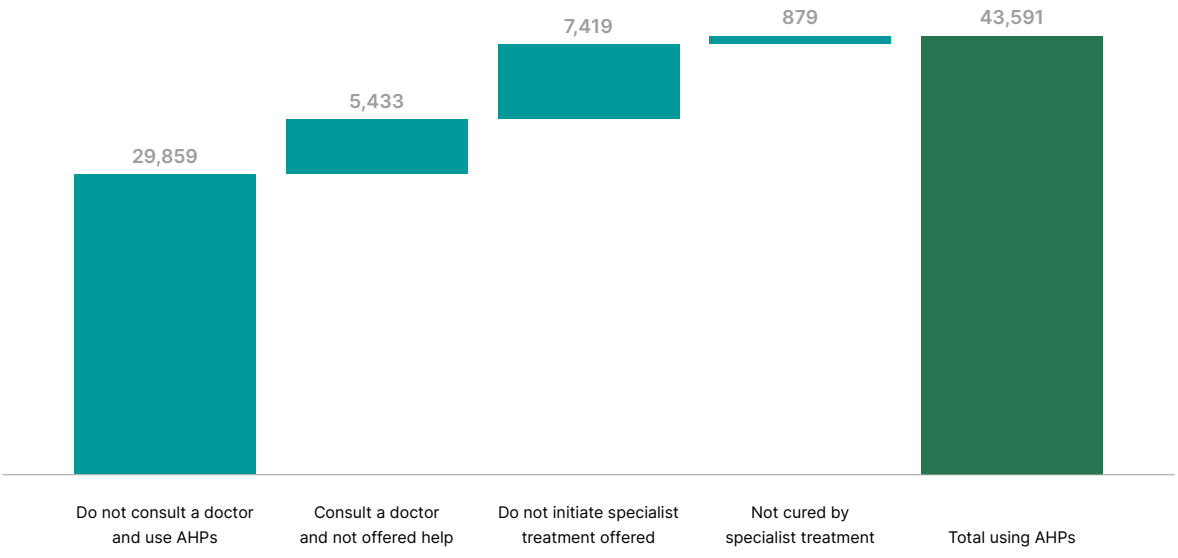
The calculations on which these figures are based are set out in Appendix 1. A model was created using the published literature to build a picture of AHP usage as the individual with UI chooses whether or not to seek or take up medical treatment. Prevalence figures are those from Irwin (2006).[2] Between 13% and 34.7% of women with UI consult a doctor.[39/40/41/42/43] The proportion of women using AHPs prior to seeking treatment ranged from 38.9% to 45.9%.[44/45/46] Not everyone who sees a primary care professional for UI is offered help. It is assumed that the 30% of those who seek help for UI will have sufficiently bothersome UI to require self management with AHPs.[1]

23% of those who are offered help at this stage find information and advice to be sufficient.[1] It is conservatively assumed that none of these will need AHPs although, in practice, a proportion are likely to continue to do so. All those for whom this is not adequate are assumed to be offered specialist help, although the literature indicates that only 24% decide to initiate treatment.[1] Those who do not are assumed to rely on AHPs.

When people with UI do receive specialist treatment, there is a wide range of possible therapies, each with their own rates of success. A systematic review of cure rates of treatments for different types of UI, in men and in women, was used to calculate mean figures for sex- and UI type-dependent cure rates and applied to the numbers of individuals remaining at this stage in the model.38 Those who were not cured at 12 months were assumed to need long term AHPs to contain their UI.

When the figures of those using AHPs are combined, it is found that approximately 43,500 out of a notional 1 million population (4.4%), and 47% of the population with UI, rely on these to contain their UI. AHPs are therefore seen to provide an important support for this community.

FIGURE 2 ⇒ **Urinary incontinence treatment uptake and success in a typical population of 1 million**



Absorbent hygiene products have a significant part to play in managing urinary incontinence

Absorbent hygiene products are effective in managing urinary incontinence

AHPs have been accepted for many years as the preferred option for managing UI, both while the underlying cause of the UI is investigated and treated, as well as for those whose incontinence cannot be fully cured. As a result there are few studies in the public domain into the benefits of use of AHPs compared with ad hoc methods used such as paper products (tissue, paper towels, toilet paper) and multiple layers of clothing.[47] A study carried out in Thailand in 2015 assessed the effectiveness of AHPs, with the purpose of informing the development of the health benefits package under Thailand's Universal Health Coverage Scheme.[48] Disposable AHPs were used for 10 weeks in a population of men and women. Health related quality of life and the level of performing activities of daily living improved significantly. The risk of developing pressure ulcers significantly decreased by 67%.

The selection of appropriate continence products plays a significant role in maintaining the well-being and quality of life of individuals with incontinence and their caregivers. Effective product design and use enable individuals to manage their condition discreetly, preserving their social identity as continent and reducing the stigma associated with incontinence. The inability to do so may lead to restricted social and professional participation, negatively impacting relationships, emotional well-being, and mental health. For caregivers, confidence in a product's ability to prevent public embarrassment is essential. Additionally, the use of appropriate products reduces the level of care required for hygiene management, skin protection, and laundry.

Due to the intimate and often stigmatised nature of incontinence, self-image can influence product preferences. This effect may be particularly pronounced in younger individuals, for whom body image is a key concern. In this group, inadequate product options may disrupt social and interpersonal development, leading to isolation and limited participation in everyday activities. A fundamental measure of a product's effectiveness is its ability to provide reliable concealment. However, achieving this may require trade-offs. In some cases, individuals may prioritise the increased security of higher-capacity products, even if these are less discreet when worn.

The different types of absorbent hygiene product

A number of products exist to manage the main types of UI (stress, urge and mixed), for example bodyworn urinals and sheaths as well as AHPs. AHPs are the most widely chosen product category, and they exist in a wide variety of types and absorbencies to address a range of user needs. Catheters should only be used for the less common overflow incontinence from urinary tract obstruction. The significant problems with their use, including urinary tract infection and tissue trauma, mean they have no place in the management of SUI, UUI or MUI.

The majority of AHPs are worn on the body ('bodyworn'), but some are designed to be placed beneath the user. These underpads may be designed for use on chairs or on bed. Products in both categories can be either disposable, intended for single use, or washable, allowing them to be laundered and reused multiple times. Underpads

are used to contain leakage that may occur with suboptimal use of bodyworn products and during washing of an immobile person. A good quality bodyworn product suitable for the individual user does not leak and underpads are not needed. This section will concentrate on the bodyworn category.

Although absorption capacity is an important consideration, it is not the sole factor influencing product choice. Patterns of urine loss vary between individuals. Some experience frequent, small-volume, low-flow leakage, often described as "dribbling," while others remain dry for extended periods but then experience a sudden, high-volume, high-flow episode, referred to as "gushing" or "flooding." Despite these differences, both groups may prefer products designed for light incontinence.

Among mobile and independent women living in the community, smaller products are generally favoured regardless of incontinence severity. Many in this group prefer to change products frequently rather than use larger alternatives with higher absorption capacity that require less frequent replacement. In contrast, individuals who are immobile and dependent on caregivers for assistance may prioritise the security of higher-absorption level products, even if their actual urine loss is relatively low, due to the challenges associated with product changes.

Bodyworn AHPs can be classed into the groups set out in Table 3, which describes the key features of each type.

Absorbent hygiene products, whether disposable or washable, typically consist of three layers: a water-permeable top sheet in contact with the skin, an absorbent core and a waterproof back sheet.

Disposable absorbent cores primarily contain fluffed wood pulp, often combined with superabsorbent polymer (SAP), which is concentrated in the crotch area for effective moisture retention. Today's absorbent cores often feature multiple layers with distinct functions, such as an upper layer designed to rapidly distribute urine and maintain dryness, while lower layers provide storage capacity. Some products also incorporate breathable but waterproof backings to improve airflow to the skin.

Absorbent hygiene products are effective in managing UI

The types of AHP used vary according to the severity of the UI and individual clinical and/or functional needs and preferences. Broadly, the evidence for the effectiveness of AHPs is divided into that for those with small leaks and the evidence for those with moderate voids and up to the emptying of the full bladder.

The most recent reliable study of AHPs in women with small leaks found that on most variables, including leakage, discreetness, numbers of laundry items and products used as well as skin health, disposable pads were significantly better than other types of product used in practice,

TABLE 3 ⇒ **Categories of Absorbent Hygiene Product for Urinary Incontinence**

NAME (ISO 22748)	**DESCRIPTION** (ISO 9999)	**CODE** (ISO 9999)
All-in-ones	Pads with fastener system, single-use	09 30 21
Pull-ons	Pads resembling underwear, single-use	09 30 24
Belted Pads	Pads with belt as fastener system, single-use	09 30 25
Pads for underwear	Pads to contain urine, with adhesive strip, single use	09 30 26
Fixation underwear	Fixation underwear to hold absorbent pads in place, reusable	09 30 39
Male Pads	Pads for male to contain urine, with preformed shape, single use	09 30 28
Unbacked pads	Pads without waterproof backing, single-use	09 30 30

SOURCE: ISO 22748 'Absorbent incontinence products for urine and/or faeces — Product type names and illustrations'[49]



including disposable pull-on or menstrual pads, and washable pads or pull-ons. Most women preferred disposable pads, while washable pads were significantly worse than the other designs. Washable AHPs presented a particular problem when the women were away from home.[50]

Assessing the evidence for AHPs for men, the ICI recommendations are for disposable male pads as being the most acceptable and effective design for those with small leaks.[1]

For those with larger volume loss a variety of products are typically used, with pads, all-in-ones, belted pads and pull-on pads being the most common AHPs. In the same study as cited for people with small leaks, investigation into the preferences of men and women experiencing higher volume leaks found different designs of disposable AHP to be the preferred option over the washable options. The study found that washable products presented many practical problems for those with higher volume leakage, particularly when away from home.

For someone with UI who goes out to work, it is not practical to rely on washable products as they are bulky and the used pads need to be stored during the course of the working day. The discreetness and ability to dispose of AHPs allow people with UI to remain economically active, while the same considerations allow them to continue their social activities, thereby improving their quality of life and benefiting both the individual and society as a whole.[48]

Within the home, AHPs improve the ability of the individual with UI to carry out activities of daily living. The reduced leakage from AHPs means the person with UI has to spend less time washing clothes or bed linen, with the consequent saving in time and money. For those who are less mobile this can reduce the need for carer support.

Absorbent hygiene products are a worthwhile expenditure for the public payer

Economic benefits of absorbent hygiene products

The quality of life benefits provided by disposable AHPs have been discussed in the previous section, along with the improvement in activities of daily living that they confer.[48] In addition, these products play an important role in allowing the working person with UI to stay in work and to remain productive while there. Many studies demonstrate the impact of UI on those at work, with increased absenteeism and reduced productivity.[51] While these wider economic impacts provide additional incentives to prevent and cure UI, this is not always possible.[38] AHPs mitigate the economic impact, allowing people with UI to remain in work, while their ease of use keeps their negative effect on productivity to a minimum.

Additional economic benefits of disposable AHPs result from their better performance compared with reusable products, for example in their lower rates of leakage and improved skin health.[50]

Successful containment reduces the costs of additional dry cleaning and laundry of clothes and bed linen. Furthermore, reusable products require a higher initial outlay, and need washing and drying facilities to which not everyone has access.

Estimated costs of absorbent hygiene products

In an earlier section the costs of UI to the individual and the healthcare system were considered. AHPs contribute to this cost. A US study, conducted by online survey and reported in 2023, showed the usage and costs of disposable AHPs. These differed significantly by severity of UI, as set out in Table 4. Overall, women reported using a mean of 1.8 incontinence products in 24 hours. Mean weekly cost was $5.42, equivalent to $282 per year.[46]

A Dutch study published in 2022 examined the costs of UI care for adults living in the community.

TABLE 4 ⇒ **Consumption of AHPs by US women with differing severities of urinary incontinence**

	SLIGHT	MODERATE	SEVERE	VERY SEVERE
Proportion of total 698 respondents	26.5%	57.6%	14.8%	1.1%
Mean number of incontinence products / 24hr	1.1	1.8	2.9	9.5
Mean cost / week	$1.77	$5.31	$9.83	$33.88
Mean cost / year	$92.04	$276.12	$511.16	$1761.76

SOURCE: Chisholm 2022[46]

This included primary and secondary medical care, physiotherapy, social services, occupational therapy, home care, medication and incontinence materials.[52] They found that disposable AHPs constituted between 11% and 15% of the total cost of care. A study conducted for the Continence Foundation of Australia by Deloitte was published in 2024 and examined the costs of UI in both the community and residential care setting. They included the loss of productivity caused by UI and found that the category of aids and equipment, of which AHPs constituted 93.5%, made up 1.1% of total national UI costs. When productivity and other non-healthcare costs are excluded, AHPs represented 18.3% for men and 17.5% for women.

Public healthcare systems consistently decide to reimburse AHPs, thereby endorsing their value. For example, the UK National Health Service provides AHPs to those with moderate to severe UI on clinical assessment of the need.[53/8] In the Netherlands, absorbent incontinence products are reimbursed if prescribed by a physician for conditions that significantly impact daily life and persist for more than two months. In 2020, over 400,000 people received reimbursed absorbent incontinence products in the Netherlands.[52] Australia is another country whose healthcare system funds incontinence products, administering the Continence Aids Payment Scheme (CAPS) to help people with severe and permanent UI to buy AHPs.



Industry initiatives are reducing the environmental impact of absorbent hygiene products

Introduction

Previous sections have explored the personal and societal benefits of AHPs and provided an assessment of the economic cost to the individual and to the healthcare system, recognising the value placed on this class of products by people with UI and the health authorities alike. However, the use of AHPs inevitably comes with an environmental cost, as does all health care. Health Care Without Harm, an international NGO and advocate for environmental health and justice, published a green paper in 2019 that estimated health care to represent 4.4% of global net emissions.[54]

Environmental impact is an increasingly important consideration in healthcare, but it should not be the only factor

The United Nations defines sustainable development as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. In order to promote this goal of sustainable development, in 2015 all United Nations member states adopted the 2030 Agenda for Sustainable Development, which includes 17 Sustainable Development Goals (SDGs).[55] The SDGs' holistic approach ensures that environmental policies are not developed in isolation but are linked to broader objectives such as poverty reduction, health, and equality, thereby promoting sustainable development in all its dimensions.

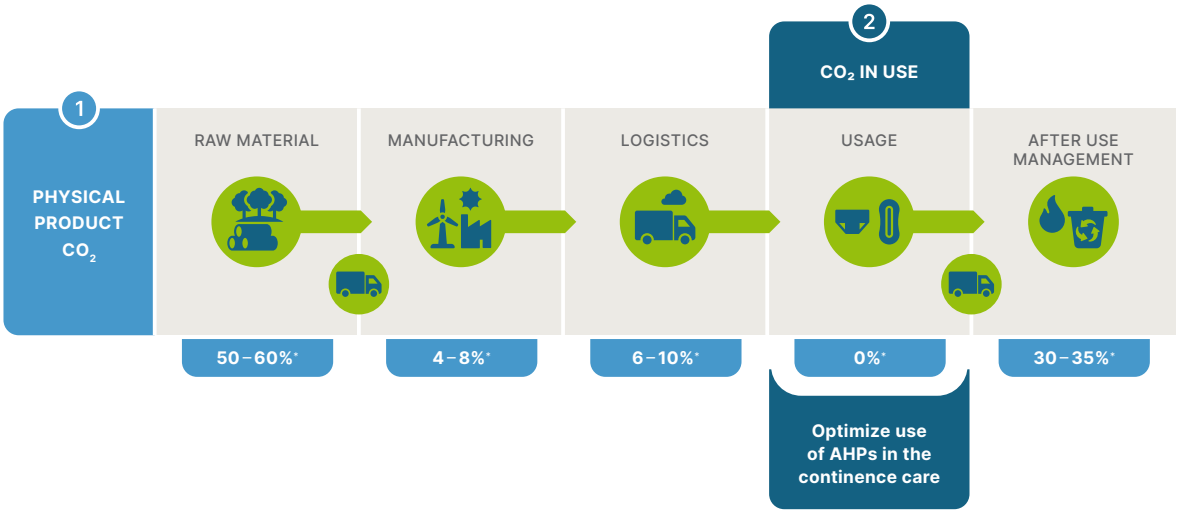
While disposable absorbent hygiene products come with an environmental cost, measures to reduce their footprint must be balanced against other Sustainable Development Goals (SDGs), notably promoting health (SDG 3) and achieving gender equality (SDG 5), recognising that women experience a higher rate of UI than men. Strategies to mitigate environmental impacts should not compromise the availability and effectiveness of these products, as they are essential for the health, dignity, and social participation of those affected.

Industry has used life-cycle assessments to improve the environmental profile of absorbent hygiene products

The AHP sector has for many years been working to reduce the environmental impact of its products. Following a cradle-to-grave life cycle assessment (LCA) approach as illustrated in Figure 3, manufacturers have identified the environmental impact of all stages of a product's life cycle over which they have control, assessing which stage contributes most, from raw material extraction to production, distribution, use, and final disposal.[56]

Addressing the early stages of the life cycle, the sector has succeeded in reducing the overall weight of products while improving functionality. Advances in absorbent technology, particularly in superabsorbent polymers (SAP), have enabled manufacturers to achieve the same or improved levels of absorbency with less material. This has reduced raw material use, leading to a reduction in the product weight which, in turn, has led to a beneficial reduction in distribution costs as well as the weight of used product for disposal. The inclusion of renewable materials such as bio-based polymers has also been explored but widespread adoption has been limited by concerns regarding performance.

FIGURE 3 ⇒ **Stages of the absorbent hygiene product life cycle over which manufacturers have control**



The % stands for how much our total carbon footprint represent for each stage of the life cycle.

The usage phase is not within the manufacturer's direct control, but the sector has been active in promoting person-centred care, particularly in the residential sector. In a 2022 study of continence management in Italian care homes, most of the residential facilities used a greater number of AHPs than considered necessary by the researchers. After implementation of a person-centred initiative that included a careful tailoring of AHP selection to individual needs and greater attention to toileting, the number of AHPs used reduced by a median of 24.6%, with no increase in leakage or negative effects on skin health.[57]

The introduction of sensor technology is demonstrating its ability to improve continence care while reducing AHP usage. Systems have been developed to address different elements of care. These can improve the assessment of a person's UI and have been shown to lead to a reduction in total absorbency of night time AHP use.[58] Alternatively, they may indicate the fullness of a person's bladder if they have lost sensation or cannot communicate their needs; or they may signal when an AHP needs to be changed.[59/60/61/62/63]

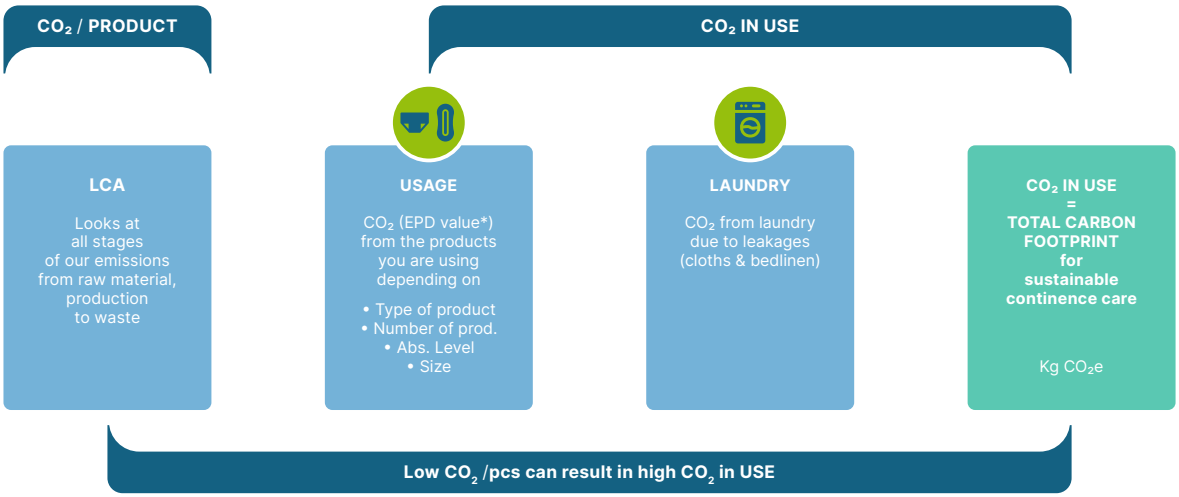
When comparing reusable with disposable products, the reduction in carbon footprint during the disposal phase is only one component of the assessment, and the environmental impact during the earlier phases, including usage, needs to be performed, as illustrated in Figure 4. The appropriate choice of product type, size and absorption level plays an important role in minimising the resources needed to provide effective continence management and avoid leakages.

Industry is exploring ways to reduce environmental impact of disposal

Since 2004, EDANA, the industry association for the nonwoven and absorbent hygiene product sector, has been conducting life cycle analyses on AHPs with a view to identifying opportunities for minimising their environmental impact. In the autumn of 2021 EDANA started an industry-led "waste-to-resource" initiative. Its aim is to address the growing need to identify options for handling AHP waste with lower environmental impact, and to explore the possibility of a circular economy approach within the AHP sector in which products can be reused or recycled.

EDANA sees the first phase of its initiative as a knowledge-building exercise to better understand key waste streams and identify promising pilot

FIGURE 4 ⇒ **Calculation of the CO_2 in use of absorbent hygiene products**



* CO_2e values from the EPD per article used

projects for collecting, separating, and recycling AHP waste. Based on its findings, EDANA aims to establish real-life pilot programmes that showcase industry leadership in advancing potential solutions for the end-of-life stage of AHPs.

As part of this knowledge-building initiative, in 2023 EDANA published a report entitled 'EDANA - AHP Waste to Resource Initiative'.[64] This document provides an industry-wide perspective on the efforts taken to minimise the environmental impact of AHPs, including those used for adult UI. Given that UI products for adults account for approximately 60% of the AHP waste stream in Europe, their disposal and potential for recycling have been key considerations in circular economy discussions. While manufacturers have sought to improve sustainability through product design, waste management, and recycling innovations, numerous challenges remain. The following description of the current situation is derived principally from the EDANA report.

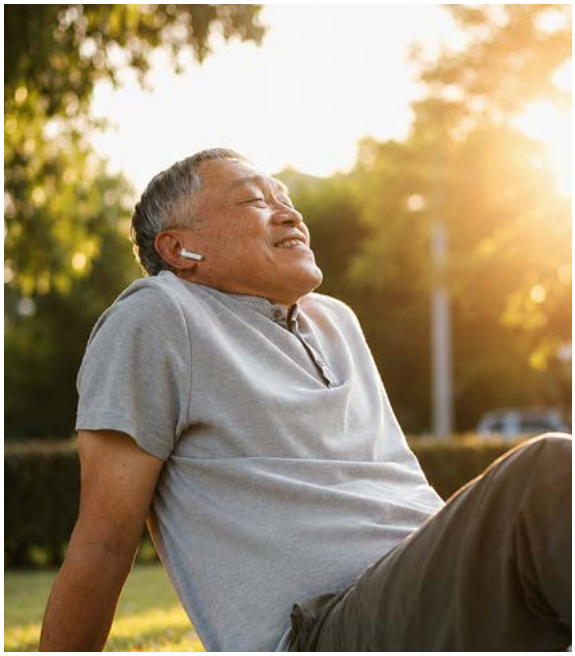
Challenges in waste collection and segregation

One of the primary obstacles to sustainable disposal of UI products is the lack of dedicated collection systems. Most used products are disposed of as part of municipal solid waste (MSW), which limits recycling options. Unlike baby diapers, which are used mostly in the home and have been the subject of targeted collection schemes in some European cities, adult incontinence products are used in a wide variety of settings including care homes, hospitals, and private residences, requiring their collection to be organised from multiple waste streams.

Some initiatives have attempted to integrate AHP collection into healthcare waste management systems. For example, pilot schemes have trialled the collection of used products alongside the delivery of new ones in care home settings. However, such initiatives have faced barriers including a lack of infrastructure, high costs, and the requirement for compliance with hygiene and healthcare waste regulations.

Recycling efforts and their limitations

Recycling of UI products remains highly limited, with <1% of AHP waste being processed in recycling facilities.[64] Current approaches involve mechanical separation of components such as plastics, SAP, and cellulose. Facilities in Italy and



the Netherlands have piloted autoclave-based separation methods, which sanitise and break down the waste into reusable fractions. However, these operations have struggled with economic viability due to the high costs associated with collection, sorting, and material recovery.

Plastics from UI products can, in principle, be recovered for reuse in manufacturing processes, but the mixed plastic that results make it inappropriate for anything but simple applications. Contamination with organic waste is a particular challenge in the regulated manufacturing of medical devices such as Continence products which require raw materials meeting very high hygiene and safety requirements. SAP, which constitutes a major fraction of the product weight, has proven difficult to repurpose, as it retains absorbed liquid and is difficult to separate effectively. The cellulose fibre content, while theoretically recyclable, requires extensive decontamination and processing before it can be reused.

Several alternative recycling technologies have been investigated, including chemical recycling and pyrolysis, which break plastics down into reusable chemical feedstocks. These remain largely at the experimental or pilot stage and are not yet commercially viable. More innovative approaches, such as the use of fungi or bacteria to degrade organic components, have been proposed, but have not yet demonstrated feasibility at scale.

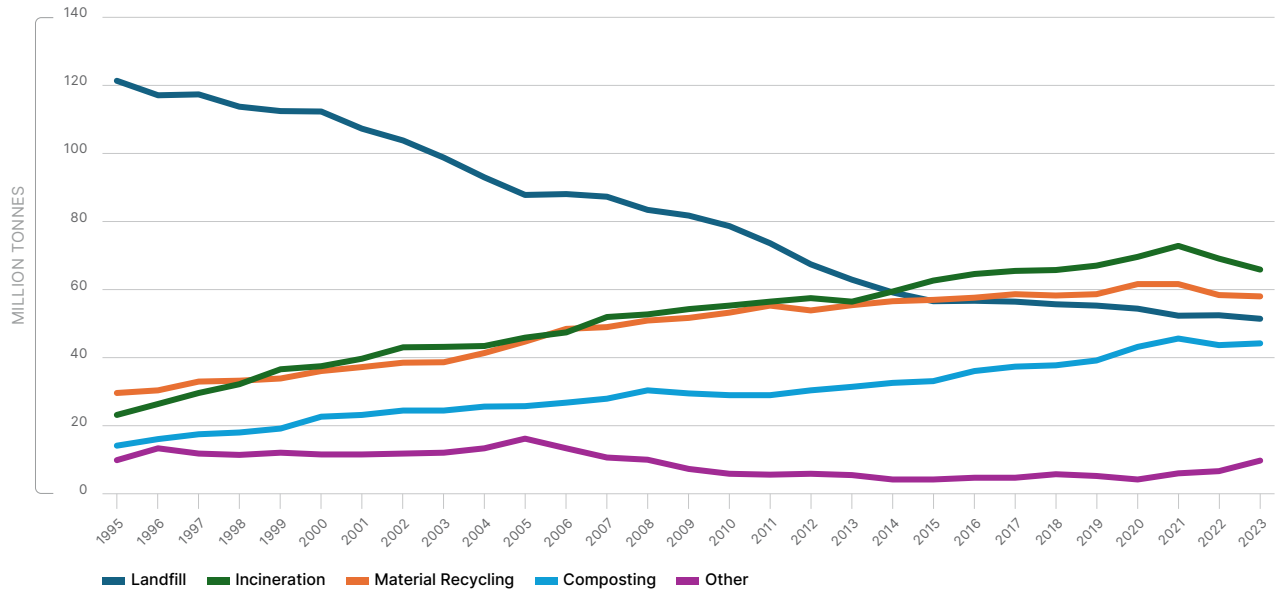
Achieving a more circular end-of-life for absorbent hygiene products depends on more than the technical feasibility of recycling methods. It also requires infrastructure solutions for collection, sorting and industrial-scale recycling, as well as economically sustainable business models. In particular, there needs to be a consistent demand from manufacturers for the recycled materials, otherwise the investment and operating costs of recycling will remain unappealing to the disposal sector. Commercial viability of AHP recycling will only be achieved when technology, infrastructure and market demand for recycled product come together.

Anaerobic fermentation and energy recovery

Given the high organic content (58%) of used UI products, anaerobic digestion (AD) has been considered as a disposal route.[64] This process involves the breakdown of organic matter by microorganisms in oxygen-free conditions, producing biogas that can be used for energy generation. However, pre-treatment is needed to address the presence of pharmaceutical residues and microorganisms in the organic component. Synthetic materials, particularly plastics and SAP, cannot be easily separated from the organic fraction. They do not degrade under anaerobic conditions, can interfere with the process, and microplastics are typically present in the remaining digestate.

Where AD is not feasible, incineration with energy recovery is the most common disposal method. Approximately 55% of UI product waste is incinerated in Europe, with heat and energy being recovered for use in district heating and electricity generation. While this method prevents landfill accumulation and makes use of the waste's heat-generating capacity, it does not contribute to material circularity. Moreover, concerns over emissions and the need for regulatory compliance limit the expansion of incineration capacity in some regions.

FIGURE 5 ⇒ **EU27 municipal waste disposed of by different waste streams, 1995–2023**



The role of landfilling and consumer behaviour

Consumer behaviour plays a role in determining disposal outcomes. Over the last 30 years municipal waste has been steadily removed from landfill in the European Union.[65] Figure 5 demonstrates how other means of disposal have been replacing this route, with recycling playing an increasingly important role.

However, a lack of awareness regarding proper disposal methods, combined with the absence of accessible recycling or collection schemes, means that the majority of home users default to standard household waste disposal. Public education and engagement have been identified as necessary steps to reduce the amount of waste produced through a focus on selecting the correct products for individual needs, as well as to improve waste sorting and encourage participation in any future collection initiatives.

Future directions and industry initiatives

The industry has proposed several pilot projects to explore alternative collection and recycling models.[64] These include:

- A collection system for care homes and hospitals, in which used products are collected alongside deliveries of new supplies to ensure a controlled waste stream.
- A consumer-driven collection scheme allowing individuals to register for UI product waste collection during specific life stages when they are needed.
- A recycling pilot combining autoclave-based sterilisation with chemical recycling to improve material recovery.
- A fermentation-based recycling process focusing on organic component degradation and biogas production.

Despite these initiatives, the transition to a more circular system for UI product waste remains challenging. Economic constraints, regulatory hurdles, and the technical difficulty of separating materials all present significant barriers to large-scale recycling. However, AHP industry stakeholders continue to explore solutions with the disposal sector, and further investment by the latter in research and infrastructure will be necessary to make sustainable end-of-life treatment a reality.

Conclusions

Urinary incontinence (UI) is a significant health condition affecting a substantial proportion of the population. With an ageing demographic and rising prevalence of obesity and physical inactivity, the number of individuals experiencing UI is expected to increase. Although some measures can reduce risk factors and improve management, UI is not easily preventable, and many individuals will continue to rely on absorbent hygiene products (AHPs) for daily life.

AHPs provide an effective solution for maintaining independence, social engagement, and workforce participation for people with UI. Public authorities can play a role in improving UI management by promoting awareness campaigns to reduce stigma and by ensuring public spaces are designed to accommodate those with UI, including increasing the availability of toilet facilities while ensuring that the healthcare system provides access to the appropriate type of AHP for the individual's needs. Health systems can improve training for primary care professionals, nurses, and carers to facilitate earlier identification and tailored management, while promoting research into, and adoption of, promising sensor technology to reduce unnecessary AHP consumption.

Industry has taken steps to improve product performance while reducing environmental impact, as demonstrated by life-cycle assessments (LCAs). Reusable absorbent products are not always the most sustainable option when considering performance, skin health and practicality, but hybrid washable/disposable systems may be a sustainable option. Further collaboration between the AHP sector, policymakers, and the waste management industry is needed to advance sustainable disposal technologies and improve recycling initiatives.

A comprehensive approach involving healthcare, public policy, and industry will be necessary to balance clinical, economic, and environmental considerations, ensuring effective UI management while minimising its impact on individuals and society.

APPENDIX 1

Methodology used to calculate numbers of people using absorbent hygiene products to manage their urinary incontinence

AHPs are used by a large number of people to manage their UI, but the published literature does not provide a good indication of how many people rely on these products. Figure 2: *Urinary incontinence treatment uptake and success in a typical population of 1 million* provides a visual representation of the figures estimated in Table 5 below.

TABLE 5 ⇒ **Number of people with UI who rely on Absorbent Hygiene Products out of a population of 1m adults**

	PROPORTIONS		TOTAL #	
	Men	Women	Men	Women
Total population	50%	50%	500,000	500,000
Subtotal				1,000,000
Proportion with UI[A]	5.4%	13.1%	27,000	65,500
Those with UI who consult a doctor[B]	19.6%	19.6%	5,287	12,825
Those who do not consult a doctor	80.4%	80.4%	21,713	52,675
Those who do not consult a doctor who use AHPs[C]	**40.1%**	**40.1%**	**8,716**	**21,143**
Subtotal				**29,859**
Those who consult a doctor and who are not offered help[D]	**30%**	**30%**	**1,586**	**3,847**
Subtotal				**5,433**
Those who consult a doctor and who are offered help	70%	70%	3,701	8,977
Those for whom information and advice are sufficient[D]	23%	23%	851	2,065
Those for whom information and advice are not sufficient and are offered specialist treatment	77%	77%	2,849	6,913
Those who decide not to initiate specialist treatment	**76%**	**76%**	**2,166**	**5,254**
Subtotal				**7,419**
Those who decide to initiate specialist treatment[D]	24%	24%	684	1,659
Subtotal				2,343
Proportions of UI by type[A]				
SUI	25%	54.1%	171	898
MUI	25%	40.5%	171	672
UUI	50%	5.4%	342	90
Those who can be cured with specialist treatment at 1 year[E]				
SUI	54.4%	75.0%	93	673
MUI*	50.6%	60.9%	87	409
UUI**	46.9%	46.9%	160	42
Subtotal				1,464
Those for whom specialist treatment does not provide a cure				**879**
Total number of people who rely on AHPs				**43,591**
Proportion of total population using AHPs				**4.4%**
Proportion of population with UI using AHPs				**47.1%**

A. Irwin 2006 / B. Seim 1995, Roberts 1998, Lionis 2001, Pedersen 2017, Biyik 2019 / C. Sørbye 2009, Chisholm 2022, Güner 2023
D. Cardozo 2023 / E. Riemsma 2017

* Assumes midway between SUI and UUI / ** No data given for men

The above-referenced section explains the approach followed in the table, which is expanded upon below.

- Prevalence figures are those from Irwin (2006).[2] These are conservative figures, with the ICI commenting that many publications estimate UI prevalence figures in adults to be between 25% and 45% of women and 5% to 32% of men.
- Between 8.5% and 34.7% of women with UI consult a doctor.[39/40/41/42/43] A weighted arithmetic mean of the figures is used both for women and, because there are few publications with the equivalent data for men, for this sex also.
- The proportion of women using AHPs prior to seeking treatment ranged from 38.9% to 45.9%.[44/45/46] A weighted arithmetic mean of the figures in these publications is used.
- Not everyone who sees a primary care professional for UI is offered help. The ICI estimates this figure to be 70%.[1]
- Of those offered initial help by the primary health care professional, the ICI estimates this to be sufficient for 23%.[1] It is conservatively assumed that none of these will need AHPs although, in practice, a proportion are likely to continue to do so.
- All those for whom this is not adequate are assumed to be offered specialist help, although the literature indicates that only 24% decide to initiate treatment.[1] Those who do not are assumed to rely on AHPs.
- When people with UI do receive specialist treatment, there is a wide range of possible therapies, each with their own rates of success. A systematic review of cure rates of treatments for different types of UI, in men and in women, was used to calculate mean figures for sex- and UI type-dependent cure rates and applied to the numbers of individuals remaining at this stage in the model. It has been noted above that surgical practice for treating SUI in women has changed in recent years and the figures used here may not represent current surgical techniques. This review does not cover success rates for MUI treatment as this category covers those with features of both SUI and UUI but in widely varying proportions. For simplicity, the arithmetic mean of the success rates of treatments for SUI and UUI are calculated. The systematic review does not provide data for success rates of UUI in men, and figures for women are assumed to apply.[38]
- Those who were not cured at 12 months were assumed to need long term AHPs to contain their UI.

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