

## The Hepatitis C Trust Post-Treatment Survey

### Executive Summary

The Hepatitis C Trust held a web-based survey from April 2006 to September 2007 that asked about people's experience of anti-viral hepatitis C treatment and in particular how they felt up to 3 years after finishing the treatment. 500 respondents completed the questionnaire.

#### Key findings:

- 90% of people reported ongoing symptoms/side effects for longer than 12 months after treatment ended.
- The five most frequently reported post treatment symptoms/side effects were fatigue, joint aches/pains, brain fog, depression and mood swings.
- Regardless of SVR (sustained virological response), 40% of people felt worse after treatment than before and 31% felt better.
- For those who had attained SVR 37% felt better and 36% felt worse
- For those who hadn't attained SVR 18% felt better and 50% felt worse.

This was a retrospective survey and therefore contained the potential for bias for a number of reasons. Nonetheless, the hugely varying experiences of treatment reported here, particularly the severity of side effects and how long they last, the apparent persistence of side effects in a large majority and the comparatively low correlation between SVR and feeling better clearly indicate that considerably more research is required into the longer term physical and psychological impacts of hepatitis C treatment.

#### The Hepatitis C Trust recommends:

- 1) The development of considerable further research, including a large scale prospective longitudinal study which monitors people's experiences in the periods before, during and after treatment and when and why these differ.
- 2) That the findings from such a study be utilised to assist in the development of more appropriate support services for patients, both for those who have not yet undergone treatment, those who have attained an SVR and those who have not.
- 3) That the findings should also inform improved guidance for physicians and other medical staff in preparing people for treatment and assist in people's decision-making processes before treatment as well as assist in how treatment and post-treatment follow-up is understood and managed.

## Introduction

The Hepatitis C Trust often hears from people who have undergone pharmaceutical treatment to eradicate their virus. The standard treatment for hepatitis C involves taking a combination of two drugs, pegylated interferon and ribavirin, for a period of either 6 or 12 months, dependent on the genotype of the virus.

Many patients report ongoing and potentially long term symptoms/side effects post treatment. This period has been the subject of almost no research and information available for patients is scarce and often anecdotal, with people relying on chat-rooms or peers to discuss and compare post-treatment experiences.

In an effort to develop more knowledge in this area, between April 2006 and September 2007, The Hepatitis C Trust posted an online survey on their website asking a range of questions regarding post-treatment symptoms/side effects (Appendix 1).

500 respondents completed the survey and all of them were more than 6 months post treatment. It should be noted that the survey was web-based and, as such, respondents were not solely from the UK. In addition there was a range of treatment lengths, from 4 weeks to 3 years, across the study population (47 respondents reported more than one year of treatment) and a number of people had undergone treatment more than once.

The following report is a summary of the survey findings. The Hepatitis C Trust would like to thank all those people who took part in this survey, both for their time and for sharing their experiences.

## Respondents by Gender and Age Bracket

As shown below, just over half of respondents were female and over 80% were aged between 41 and 60.

**Table 1) Respondents by Age/Gender**

Age	Female	Male	No response	Total	%
18 – 30	13	4	-	17	3.4%
31 - 40	30	20	-	50	10%
41 - 50	134	89	-	223	44.6%
51 - 60	87	107	-	194	38.8%
61 - 70	6	6	-	12	2.4%
Over 70	1	-	-	1	0.2%
No answer	-	-	3	3	0.6%
Total	271	226	3	500	100%
%	54.2%	45.2%	0.6%	100%	

## Respondents by Ethnicity

The ethnic breakdown of respondents was as follows

**Table 2) Respondents by Ethnicity**

Ethnicity	#	%
White/Caucasian	475	95%
Mixed Race	9	2%
Asian	6	1%
Latin American	2	0.4%
Other	8	1.5%

## Respondents by Age and Genotype

The majority of respondents were genotype 1 with genotype 3 representing the second highest proportion of responses. This differs from the general distribution in the UK: the most recent prevalence figures available from the Health Protection Agency indicate that genotype 3a is the most common in the UK.<sup>1</sup>

**Table 3) Respondents by Age/Genotype**

Age	Genotype							Total	%
	1	2	3	4	5	6	Don't know		
18-30	9	3	4	-	-	-	1	17	3.4%
31-40	29	3	9	1	-	-	8	50	10%
41-50	106	37	50	9	-	1	21	224	44.8%
51-60	118	26	34	1	1	-	14	194	38.8%
61-70	9	1	-	1	-	-	1	12	2.4%
Over 70	-	-	-	1	-	-	-	1	0.2%
No answer	1	-	1	-	-	-	-	2	0.4%
Total	272	70	98	13	1	1	45	500	100%
%	54%	14%	19%	2.6%	0.2%	0.2%	9%	100%	

## Sustained Virological Response (SVR) by Genotype

The percentage of successful outcomes (in terms of SVR) are roughly in line with current data on treatment and SVR, although the SVRs for genotypes 1 and 4 were higher than average and slightly lower for genotype 3. Genotype 1 had a response rate of 66%, Genotype 2 and 3 reported SVRs of 89% and 70% respectively, with genotype 4 reporting 64% SVR

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<sup>1</sup> Hepatitis C in the UK – Health Protection Annual Report 2008

**Table 4) SVR By Genotype**

SVR	Genotype							Total	%
	1	2	3	4	5	6	Don't know		
Yes	164	58	59	7	-	1	34	323	64.6%
No	86	7	25	4	1	-	11	134	26.8%
Awaiting result	19	5	14	2	-	-	-	40	8%
No answer	3	-	-	-	-	-	-	3	0.6%
Total	272	70	98	13	1	1	45	500	100%

### Pre-treatment Symptoms

Only 13% of respondents reported having no symptoms before treatment and people reported experiencing an average of 6 symptoms each before treatment.

The most frequently reported pre-treatment symptom was fatigue (including lack of energy, sleepiness and feeling run down) in 77% of patients. Joint and muscle aches were reported by just over half (53%) of respondents and depression/anxiety were reported in just under half (48%).

**Table 5) Hepatitis C Symptoms**

Symptom	#	%
Fatigue	385	77%
Joint and muscle aches	265	53%
Depression/anxiety	240	48%
Brain fog (confusion, memory loss, sudden blankness)	210	42%
Digestive problems/nausea	210	42%
Mood swings	205	41%
Un-refreshing sleep	195	39%
Night sweats	170	34%
Liver pain/discomfort	165	33%
Skin problems (itching, rashes, dermatitis, lichen planus)	155	31%
Flu like symptoms (headache, chills, fever)	145	29%

<b>Insomnia</b>	135	27%
<b>Sleeping a lot</b>	135	27%
<b>Sight problems</b>	125	25%

A very small number (2%) also reported various conditions of the nervous system, and constant infections (mouth, sinus, urinary). 0.5% reported feeling hot and/or cold constantly and 0.5% said they had hair loss

### **Medical Conditions Before Treatment**

We were interested to know of any pre-treatment medical conditions which may have had an impact on post-treatment symptoms/side effects.

5% of people reported being co-infected with hepatitis B (it is not clear whether some had experienced acute hepatitis B and later cleared the virus or were suffering from chronic hepatitis B), 4% had rheumatoid arthritis, 3% diabetes and another 3% reported hypo-thyroidism.

**Table 6) Medical Conditions Before Treatment**

<b>Condition</b>	<b>#</b>	<b>%</b>
<b>Hepatitis B</b>	25	5%
<b>Rheumatoid arthritis</b>	19	4%
<b>Diabetes</b>	17	3%
<b>Hypo-thyroidism</b>	15	3%
<b>Colitis</b>	8	1.6%
<b>Hyper-thyroidism</b>	7	1.4%
<b>HIV/Aids</b>	7	1.4%
<b>High blood pressure</b>	7	1.4%
<b>Depression</b>	5	1%
<b>Gastrointestinal conditions</b>	5	1%
<b>Fibromyalgia</b>	4	0.8%
<b>Cancers</b>	4	0.8%
<b>Hepatitis A</b>	3	0.6%
<b>Alcoholism/cirrhosis</b>	3	0.6%
<b>Neuropathy</b>	3	0.6%
<b>Haemophilia</b>	3	0.6%
<b>Other blood disorders</b>	3	0.6%

## Medical Conditions During Treatment

The survey asked whether people had any medical conditions diagnosed whilst on treatment or within 6 months of the end of treatment that became chronic (lasting more than 6 months).

The most frequently reported chronic conditions were those associated with sight/eye problems (21%) followed by arthritis (14%) hypo-thyroidism (9%) and high blood pressure (8%).

In a section allowing reports of other conditions, many issues listed could be attributed to side effects of the hepatitis C treatment rather than a diagnosed chronic condition. This creates a somewhat unclear picture of medical illnesses arising during treatment and people's understanding/knowledge of their own treatment. It raises the question of whether people are being given sufficient information on potential treatment side effects and how long these may last after treatment.

**Table 7) Medical Conditions During Treatment**

Condition	#	%
Eye problems	107	21.4%
Arthritis	69	13.8%
Hypo-Thyroidism	44	8.8%
High Blood Pressure	41	8.2%
Gallbladder disease (e.g. gall stones)	22	4.4%
Depression/Anxiety	20	4%
Blood disorders	16	3.2%
Diabetes	15	3%
Lung/breathing disorders	14	2.8%
Fatigue	14	2.8%
Hyper-Thyroidism	13	2.6%
Skin problems	13	2.6%
Colitis	10	2%
Fibromyalgia	9	1.8%
Other Psychiatric Illness	7	1.4%
Pancreatitis	5	1%
Insomnia	5	1%
Severe/chronic Pain (unspecified)	5	1%
Gastrointestinal conditions	4	0.8%
Autoimmune disorders	4	0.8%
Hearing Problems	4	0.8%
Neuropathy/Nervous system	3	0.6%
Memory Loss	3	0.6%
Hair problems	3	0.6%
Teeth/gum problems	3	0.6%
Cancers	2	0.4%
Sinus problems	2	0.4%



## Cirrhosis

Of the 500 respondents to the survey 90 (18%) reported they had been diagnosed with cirrhosis before starting treatment. Of these people the response rates to treatment are broadly in line with the full study population as shown below:

**Table 8) Cirrhosis**

SVR	#	%
No	22	24%
Yes	60	67%
Waiting for result	8	9%
Total	90	100%

## Post-Treatment Symptoms/Side Effects

In the first six months after treatment 25 people (5%) reported they had experienced no post-treatment symptoms/side effects. Between six months and twelve months, this number increased to 47 (9.3%) and after twelve months 50 people (10%) reported experiencing no symptoms/side effects. This means that 90% of people reported ongoing symptoms/side effects for a period greater than 12 months after treatment ended.

This is an important finding considering the clinical information which suggests that side effects will resolve after a relatively short space of time, and the vast majority of information that is presented to patients which encourages them to contemplate treatment.

The five most frequently reported post treatment symptoms/side effects were fatigue, joint aches/pains, brain fog, depression and mood swings.

Issues of fatigue, joint aches and pains, mood swings and brain fog all reduced by nearly 50% twelve months after treatment. However, significant numbers of patients still reported a range of ongoing symptoms/side effects.

As previously mentioned, there has been insufficient research into the longer term impacts of hepatitis C treatment, be they physical or psychological. Our findings do however concur with recent research which looked at side effects and symptoms experienced by a small number of people who had undergone treatment for HCV.<sup>2</sup> This found that 25 out of 27 research participants reported persistent physical and psychological symptoms/side effects (11 participants reporting side effects/symptoms for up to 12 months after treatment and 14 reporting ongoing symptoms/side effects for more than 12 months)

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<sup>2</sup> Hopwood, Max. Recovery from hepatitis C treatments. *National Centre in HIV Social Research: Monograph 6*, 2009.

Table 9) Symptoms/Side effects

Symptom/Side effect	First Six Months		Six to Twelve Months		Twelve Months After Treatment	
	#	%	#	%	#	%
None	25	5%	47	9%	50	10%
Fatigue (lack of energy, sleepiness, feeling run down)	367	72%	289	57%	195	38%
Joint/muscle aches	323	64%	254	50%	182	36%
Brain fog (confusion, memory loss, sudden blankness)	309	61%	237	47%	180	35%
Depression/anxiety	287	56%	228	45%	165	32%
Mood swings	246	48%	180	35%	120	23%
Un-refreshing sleep	217	43%	169	33%	131	26%
Insomnia	207	41%	140	27%	95	18%
Skin problems	201	39%	130	25%	96	19%
Flu like symptoms ( headache, chills, fever)	193	38%	110	21%	73	14%
Digestive problems	190	37%	141	28%	110	21%
Hair loss	173	34%	44	8%	20	3%
Breathlessness	166	32%	100	19%	68	13%
Sight problems	164	32%	128	25%	91	18%
Night sweats	146	28%	99	19%	66	13%
Liver pain/discomfort	141	28%	107	21%	79	15%
Sleeping a lot	139	27%	114	22%	74	14%
Lack of hair growth	100	19%	55	10%	23	4%
Neuropathy/Nervous system problems	17	3%	10	2%	6	1%
Skin problems	13	2.6%	-	-	-	-
Sexual issues	4	0.8%	7	1%	4	0.8%
Hair other	4	0.8%	-	-	-	-
Hearing problems	3	0.6%	2	0.4%	2	0.4%
Blood disorders	3	0.6%	-	-	-	-
Other psychiatric illness	2	0.4%	4	0.8%	3	0.6%
Cognitive problems	2	0.4%	-	-	-	-
Gastrointestinal conditions	1	0.2%	-	-	-	-
Autoimmune disorders	1	0.2%	-	-	-	-
Lung/breathing disorders	1	0.2%	-	-	-	-
Headaches, sinus	-	-	5	1%	3	0.6%
Fibromyalgia	-	-	1	0.2%	1	0.2%
Blood disorders	-	-	2	0.4%	-	-
Autoimmune issues	-	-	1	0.2%	-	-
Heart problems	-	-	1	0.2%	-	-



## Post-treatment experience

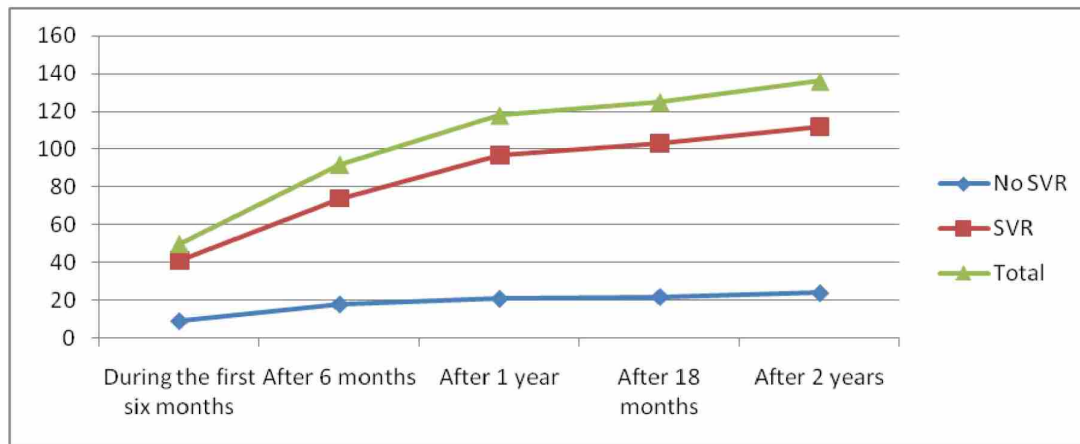
Of all 484 respondents to the question 'Did you notice feeling consistently better after treatment than you did before treatment' regardless of SVR, *more* people felt worse after treatment than before (40% reporting feeling worse as opposed to 31% reporting feeling better). 'Consistently worse' was defined as 18 months after treatment feeling consistently worse than before treatment. This is an alarming finding, even allowing for the inherent bias in a retrospective online survey, considering a major reason that people undergo treatment is to feel better and this is often a benefit indicated by medical professionals.

**Table 10) Number of people feeling better or worse after treatment**

All respondents	#	%
Felt consistently BETTER than before treatment	151	31%
Felt consistently WORSE than before treatment?	195	40%
Felt no different	138	29%
Total	484	100%

For those who reported feeling consistently better we wanted to establish how soon after treatment they felt better - during the first 6 months, after 6 months, after 1 year, after 18 months or after 2 years. The results, including SVR, are below.

**Table 11) Number of people feeling consistently better after treatment**

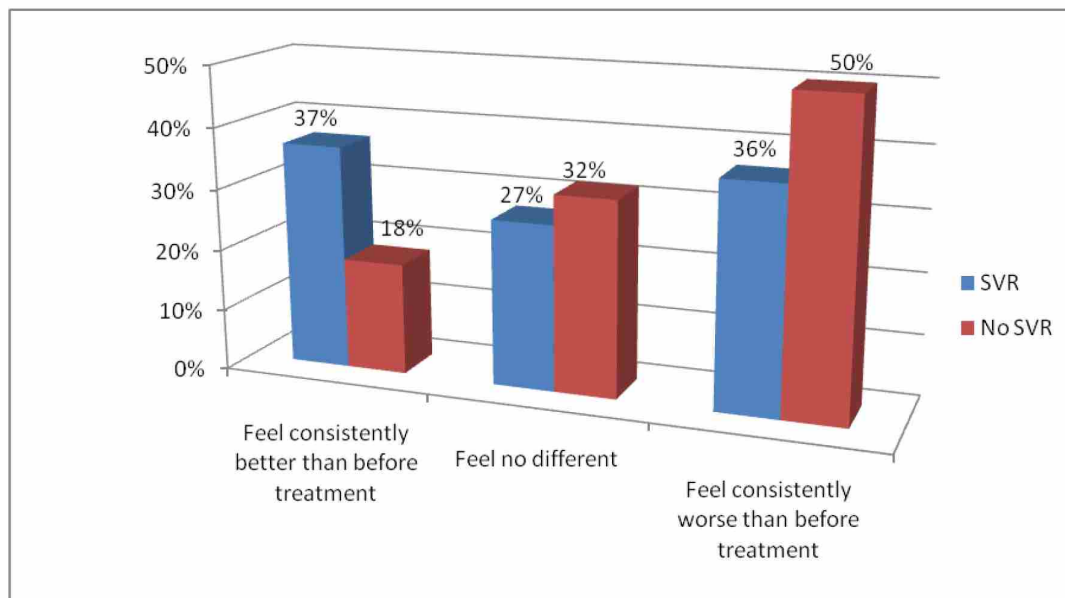


## SVR outcomes and post-treatment experience

Finally we wanted to establish whether a successful outcome (via attainment of SVR) had an impact on how people felt post treatment. As would be expected, overall a higher proportion of people who had attained an SVR felt better post treatment than those who did not. Outcomes over the long and short terms are not, however, as consistent as might be expected.

It is interesting to note that achieving SVR does not necessarily equate to feeling better post treatment, with the likelihood of feeling better approximately the same as feeling worse (37% and 36% respectively).

**Table 12) SVR vs feeling consistently better or worse**



## Discussion

The Hepatitis C Trust undertook this survey to gauge some of the impacts on patients who had undergone treatment and to add to the body of knowledge that is being developed around this emerging area.

It is evident that there is a distinct lack of research into the longer term physical and psychological impacts of hepatitis C treatment.

Because this was a retrospective survey and the periods involved quite long, comparisons between how respondents felt when they completed the survey and how they felt prior to treatment need to be treated with some caution. Furthermore, there may be some bias attributable to how respondents expected to feel after treatment and how they actually felt. It is also impossible to ascertain whether the symptoms/side effects reported by respondents are a direct result of the treatment or of previous or ongoing hepatitis C or other illnesses/lifestyle factors. Many respondents noted that neither they, nor very often their doctors, were able to decide whether their symptoms/side effects were attributable to hepatitis C, to treatment or another cause altogether.

*"Hep C nurse and GP don't seem to accept that treatment caused so many long- lasting symptoms/effects... "Well that's not because of the treatment, you've finished that now". Post-treatment support and better monitoring is much needed, plus better education of health professionals."*

*"It's hard to tell if the symptoms I have now are to do with the treatment, the condition or my age"*

*"I honestly don't know if this is related to treatment or the hep[atitis] virus itself or neither."*

Respondents reported hugely varying experiences of treatment, particularly the severity of side effects and how long they last. Evident throughout the results of the study, this is also demonstrated in the additional comments provided by survey respondents.

*"The first six months after treatment were horrid and I wished I hadn't done treatment but it's coming up to a year now and I am starting to feel really good... I'm starting to feel like I'm alive and happy for the first time in my life."*

*"Within 2 weeks I felt 100% better than I did on treatment and have not looked back. All my side effects whilst on treatment have now gone."*

*"I thought I would feel a lot better than I do, but maybe my workload has increased and I'm not good at slowing down."*

*"After 1 year I am still waiting to feel better or at least as good as I felt before treatment."*

*"It took a full 6 months to begin to feel normal again, and a further 6 months to bounce back fully to where I was before treatment began."*

*"I am concerned about my memory. I can't remember how to spell simple words. Others have said I often look confused. Generally, I feel very low. I wish that I had said no to treatment."*

*"It took longer than I had expected to get back any energy but the treatment was worth it even though I thought I would never be the same again!"*

*"My symptoms disappeared very quickly once I stopped the treatment.. the treatment was definitely worth doing."*

Despite the caveats inherent in retrospective studies, it is clear that patients perceive side-effects to persist for much longer than is generally accepted and certainly for much longer than they are told prior to commencing treatment. This needs to be addressed.

## **Conclusion and Recommendations**

The notable lack of reliable and comprehensive data on the long-term side effects associated with hepatitis C treatment has the capacity to significantly impact those undergoing the treatment process. The Hepatitis C Trust regularly receives queries from individuals who are about to embark on treatment and want to access research into its long-term physical and psychological side effects. The Hepatitis C Trust therefore recommends the development of considerable further research, including a large-scale prospective longitudinal study which monitors people's experiences in the periods before, during and after treatment and when and why these differ. We also recommend this study takes into account the experiences of people who have undergone multiple courses of treatment, as this is an emerging group of patients with little information available to them.

The findings from such a study should be utilised to assist in the development of more appropriate support services for patients, both for those who have not yet undergone treatment, those who have attained an SVR and those who have not. They should also inform improved guidance for physicians and other medical staff in preparing people for treatment and assist in people's decision-making processes pre-treatment as well as how treatment and the post-treatment period is understood and managed.

## **Appendix 1**

### **Pegylated Interferon and Ribavirin post-treatment questionnaire**

This questionnaire is designed to discover what side effects of treatment persisted (if any) after you finished treatment. It is intended for those who finished a full course of treatment with Pegylated Interferon/Ribavirin at least six months ago.

#### **Q1 - Did you complete a full course of treatment more than six months ago?**

Yes\No (if no then user is taken to end of questionnaire and thanked)

#### **Q2 - Was the most recent treatment you have undertaken pegylated interferon/ribavirin**

Yes\No (if no then user is taken to end of questionnaire and thanked)

#### **Q3 - What is your ethnic origin? (we are asking this question because some ethnic types respond differently to treatment and we are interested in whether this affects side effects after treatment.)**

White (Caucasian)\African\Asian\Chinese\Mixed parentage\Other (please specify)

#### **Q4 - Did your treatment result in Sustained Virological Response (SVR)? i.e. did you test negative for the virus 6 months after the end of treatment.**

Yes\No

#### **Q5 - In what county did you live when you received treatment?**

#### **Q6 - Are you female or male**

#### **Q7 - How old are you?**

Under 18\18 - 30\31 - 40\41 - 50\51 - 60\61 - 70\over 70

#### **Q8 - How long do you think it has been since you contracted hepatitis C? If you are unsure please give the earliest time you can recall where you may have been at risk.**

1 - 5 yrs\5 - 10 yrs\10 - 15 yrs\15 - 20 yrs\20 - 25 yrs\Over 25 yrs\Don't know

#### **Q9 - What hepatitis C genotype (strain) do/did you have?**

1\2\3\4\5\6\Don't know

#### **Q10 - Prior to treatment did you have cirrhosis?**

Yes\No

#### **Q11 - What symptoms did you have before treatment? (Tick any that apply)**

None\Fatigue (e.g. lack of energy, sleepiness, feeling run down)\Flu like symptoms (headache, chills feverishness, aching)\Joint and/or muscle aches\Digestive problems (including nausea)\Liver pain and discomfort\Depression and anxiety\Mood swings\Brain fog (e.g. confusion, memory loss, sudden blankness)\Skin problems (e.g. itching, rashes, dermatitis, psoriasis)\Insomnia\Un-refreshing sleep\Sleeping too much\Sight problems (blurred vision, loss of peripheral vision, floaters in the eye)\Night sweats\Other (please specify)

#### **Q12 - Did you have any other serious medical condition(s) before treatment? (Tick any that apply)**

HIV/Aids\Hepatitis B\Rheumatoid Arthritis\Colitis\Diabetes\Other (please specify)



**Q13 - How long did your treatment last?**

12 weeks\24 weeks\36 weeks\48 weeks \Other, please specify (e.g. longer than 48 weeks or you have had the treatment more than once)

**Q14 - How long is it since you completed treatment?**

6 months\6 - 12 months\1 - 2 years\3 years or more

**Q15 - Have you developed any ongoing medical condition diagnosed whilst on treatment or within 6 months of the end of treatment that has become chronic (i.e. that lasted more than 6 months beyond the end of treatment)?**

Pancreatitis\Diabetes\Hypo-thyroidism\Hyper-thyroidism\Gallbladder disease (e.g. gall stones)\Arthritis\Eye problems\Colitis\Other, please specify

**Q16 - In the first SIX MONTHS after treatment what symptoms/side effects (related to your treatment) did you experience?**

None\Fatigue (e.g., lack of energy, sleepiness, feeling run down)\Flu-like symptoms (headache, chills feverishness, aching)\Joint / muscle aches\Digestive problems / nausea\Liver pain/discomfort\Depression / anxiety\Mood swings\Brain fog (e.g. confusion, memory loss, sudden blankness)\Skin problems (e.g. itching, rashes, dermatitis, psoriasis)\Insomnia\Un-refreshing sleep\Sleeping a lot\Night sweats\Sight problems\Breathlessness\Hair loss\Lack of hair growth\Other, please specify

**Q17 - Between SIX MONTHS AND A YEAR after treatment, what symptoms/side effects (related to your treatment) did you experience?**

None\Fatigue (e.g., lack of energy, sleepiness, feeling run down)\Flu-like symptoms (headache, chills feverishness, aching)\Joint / muscle aches\Digestive problems / nausea\Liver pain/discomfort\Depression / anxiety\Mood swings\Brain fog (e.g. confusion, memory loss, sudden blankness)\Skin problems (e.g. itching, rashes, dermatitis, psoriasis)\Insomnia\Un-refreshing sleep\Sleeping a lot\Night sweats\Sight problems\Breathlessness\Hair loss\Lack of hair growth\Other, please specify

**Q18 - BEYOND A YEAR after treatment what symptoms/side effects (related to your treatment) did you experience?**

None\Fatigue (e.g., lack of energy, sleepiness, feeling run down)\Flu-like symptoms (headache, chills feverishness, aching)\Joint / muscle aches\Digestive problems / nausea\Liver pain/discomfort\Depression / anxiety\Mood swings\Brain fog (e.g. confusion, memory loss, sudden blankness)\Skin problems (e.g. itching, rashes, dermatitis, psoriasis)\Insomnia\Un-refreshing sleep\Sleeping a lot\Night sweats\Sight problems\Breathlessness\Hair loss\Lack of hair growth\Other, please specify

**Q19 - After treatment did you**

Have a good diet (fruit and vegetables etc)\Take enough exercise (at least three times a week)\Drink enough water (1 ½ liters per day)\Take enough rest

**Q20 - After treatment did you**

Drink no alcohol\Drink less than 2 units (1 pint of beer or 2 glasses of wine) per day\Drink more than 2 units (1 pint of beer or 2 glasses of wine) per day

**Q21 - Did you notice feeling consistently BETTER after treatment than you did before treatment?**

During the first 6 months\After 6 months\After 1 year\After 18 months\After 2 years\NOT AT ALL (i.e. 18 months after treatment you felt consistently no better than before treatment)\CONSISTENTLY WORSE (i.e. 18 months after treatment you felt consistently worse than before treatment).

**Q22 - Have you other comments about post treatment symptoms/side effects?**