

The first victim of international cross-country skiing

IN BYGONE DAYS

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It gives cause for concern that in recent years Norway's national sport has been associated with eating disorders, asthma, toxic ski wax and doping. Nevertheless, we are looking forward to this winter's world championship in Trondheim. And some things were worse in the past. During the first international cross-country skiing event in Lahti in 1926, temperatures fell to 40 degrees below zero, and one of the era's best skiers died soon after.

The first Winter Olympics were held in Chamonix in 1924. In 1926, despite the games having been a great success, the Norwegian Ski Federation was opposed to the event (1). They were also sceptical to international collaborations with countries other than Sweden and Finland, which is why they sent no competitors to the earliest forerunner to the Nordic skiing world championships, held in Czechoslovakia in 1925 (2).

The following year however, the Norwegian Ski Federation sent eight competitors and three coaches to Lahti (1). While one of the coaches was a dentist, no-one else was medically trained. Shipowner Ingolf Hysing Olsen (1883–1961) was Deputy Chairman of the Norwegian Ski Federation, and one of the founders of Fédération Internationale de Ski (FIS). He headed the team and wrote a summary account of the event in the federation's annual report (1). The coaches' most important task was to organise accommodation and meals, and to ensure that everything sports-related was appropriately conducted (1). One of the Norwegian competitors was Asbjørn Elgstøen (1900–26), but the championship in Finland would turn out to be his first and last.

We have searched the archives of the National Library, Lahti Ski Museum and FIS for information about Asbjørn Elgstøen and the skiing events in Lahti in 1926. Asbjørn's nephew and closest surviving relative, Bjørn Elgstøen (b. 1935), has given us access to his uncle's medical records from Aker Hospital.

Asbjørn Elgstøen

Asbjørn grew up as the second of seven siblings on the Elgstøa smallholding in the northern part of the Nordmarka forest. Elgstøa is situated on the main ski route through Nordmarka and it used to provide accommodation for tourists. If the housekeeper ran out of coffee or other essentials, one of the children would have to put on their skis and 'hip down' to Grua or Jevnaker (Bjørn Elgstøen, personal communication). In 1916, skiing ace Lauritz Bergendahl (1887–1965) moved to the neighbouring Katnosa smallholding (3). It was therefore no surprise that the children at Elgstøa would become excellent skiers.

After completing his compulsory military service in His Majesty the King's Guard, Asbjørn worked at Løvenskiold Sawmill by the Maridalsvannet lake. Sometimes, at the end of the working day, he would ski the 30 kilometres back home to Elgstøa in the evening (3).

In the 1920s, Asbjørn was one of the country's best Nordic combined skiers (Figure 1). He won the Royal Cup in 1922 and 1925, the latter at Holmenkollen (2). A picture of him was used as an insert with tobacco products.



Figure 1 Asbjørn Elgstøen by Frognerstøren during the 50-kilometre race in February 1923. Photo: Henriksen & Steen / National Library. In public ownership.

Freezing cold

The Norwegian skiers arrived in Helsinki on 28 January. After a training session at Espoo and ski jumping in Helsinki, they arrived in Lahti, where the Fins had created a ski stadium, similar to that at Holmenkollen.

«The temperature was around -37°C at the starting point, and fell to -42°C at the coldest part of the track»

It was bitterly cold in Lahti. Sports journalist Finn Amundsen (1897–1958) wrote in the *Idrætsliv* sports magazine that 'sure, the sun was shining, but it was cold, bloody cold, and the race should have been postponed' (3). Asbjørn did not take part in the 30-kilometre race on 4 February, but did appear on the start line for the 18-kilometre Nordic combined cross-country event the day after. According to Johan Grøttumsbråten (1899–1983), the temperature was around -37°C at the starting point, and fell to -42°C at the coldest part of the track (4). Hysing Olsen wrote '25 degrees below zero and bothersome gusts ... Lars Høgvold was advised against taking part due to a severe cold. He wanted to have a go all the same but gave up after a couple of kilometres' (1).

Johan Grøttumsbråten, who won the race, lost his woolly hat on a downhill slope. According to Olav Bø, he 'suffered frostbite on both ears, and every spring since then, he was reminded of Lahti 1926' (4). Asbjørn also lost his hat, but he was wearing ear muffs as well. When he crossed the finishing line in fourth place, his face was covered in ice and he had lost all feeling in one foot.

Asbjørn was worn out and was advised against taking part in any further events (5), but on the following day he nevertheless entered the Nordic combined ski jumping competition. It was then 'around 30 degrees below zero, great wind draughts and alarmingly cold on the jumping ramp' (1). Asbjørn took a fall in one of his two jumps due his frostbitten foot.

«Shocked spectators saw the skiers pass them with expression-less faces, white as a sheet, and campfires were lit to allow the skiers to get warm»

The temperature continued to drop before the 50-kilometre race on 7 February. Hysing Olsen managed to delay the start until ten o'clock. It was then -30°C at the start line (1) and only 20 of the 34 registered skiers entered the race. The Finnish competitors protected their face with lined plaster casts, the Swedes donned flannel nightwear as outer garments, while the Norwegians smeared their faces with vaseline. Shocked spectators saw the skiers pass them with expression-less faces, white as a sheet, and campfires were lit to allow the skiers to get warm (5, 6).

«Matti Raivio had a bad fall in a wolf trap at the half-way point, but he got back up on his feet and won the race»

Freezing temperatures were not the only challenge during the 50-kilometre race. Matti Raivio had a bad fall in a wolf trap at the half-way point, but he got back up on his feet and won the race (7) (Figure 2).



Figure 2 Matti Raivio fell into a wolf trap when competing in the 50-kilometre race in Lahti in 1926, but got back on his feet and won the race. Photo: Finnish Heritage Agency / CC BY 4.0

Hysing Olsen refused to let Grøttumsbråten and Elgstøen take part in the 50-kilometre race. This was controversial, especially since Grøttumsbråten, who was the star athlete, would not compete. Hysing Olsen was at pains to stress that the decision was down to him: 'It was me who treated his ears and I'm happy to take responsibility and the criticism' (1). Asbjørn participated in the specialised ski jumping event that took place at the same time as the 50-kilometre race, but he took yet another fall (1).

A hectic programme

Once the ski jumping competition was finished, the Norwegian team immediately travelled to Helsinki where the town's Norwegian community organised a party. The following day they travelled to Turku, where they had to wait 24 hours for a ship to Stockholm (1). The ship got stuck in ice in the Sea of Åland, and so the team did not arrive in Stockholm until 11 February. Asbjørn came 7th out of 30 competitors in the Nordic combined cross-country event on 13 February, but he took a fall in the ski jumping event the following day. Once the ski jumping was done, this was immediately followed by a medal ceremony and a party at City Hall. The following evening, the Norwegian Ski Federation organised yet another party before the team caught the sleeper train to Oslo.

Serious consequences

The team arrived at Østbanen railway station in Oslo on 16 February. At the time, no-one could have foreseen the tragedy that was to come: 'When he said goodbye to his teammates in Oslo on 16 February, Elgstøen appeared to be in better shape than any of them' (8).

But Asbjørn was far from well. On 23 February he was admitted to Aker Hospital with suspected tuberculous meningitis. According to the doctor's handwritten admission note from Aker, Asbjørn had experienced 'some digestive problems' before setting off to Finland (9). There is no mention of ski races in freezing temperatures, frostbite or even a cold: 'During his stay in Finland he was feeling well until the last week, when on the return journey, the same pain returned to his epigastric region during meals'. On 18 February, he had gone to bed with digestive problems and a severe headache. The next day, his fever was 39.6°C. Prior to his hospital admission he 'had an increasingly intense headache that centred on his forehead. It has been severe, and has affected his sleep.'

On admission, Asbjørn appeared to be tired, and he suffered from a severe frontal headache: 'he buries his face in the pillow'. No neurological deficits or neck stiffness was observed. He received subcutaneous morphine for the pain. No note was made of his temperature and blood pressure, either at the time or subsequently.

On 24 February, Asbjørn was lucid, but he still had a severe headache. His responses were slow, and there was 'some nuchal rigidity'. The lumbar puncture pressure reading was 300 mm, and the leukocyte count was $4600/\text{mm}^3$, with roughly equal numbers of leukocytes and lymphocytes. 'Approx. 30 cm^3 of cloudy fluid was tapped. Entire field of view full of cells.' No diplococci or mycobacteria were observed. The same day, he had 2.5 hours of clonic spasms in the left half of his body, 'so severe that he had to be held down, all the while Babinski + on the left side.'

On 25 February it was specified that 'there are no symptoms from the ears or nose, nor have there been previously'. Inversion of the plantar reflex continued. The pupils were small and of similar size, while 'the papillae were slightly pink (somewhat hyperaemic), left a little thicker than usual'. The spinal fluid pressure was 240 mm and 25 cm^3 of slightly cloudy spinal fluid was tapped.

On 26 February, the notes are summary in style: 'Patient rather unsettled. Lumbar puncture. Pressure not measured but spinal fluid comes in squirts, slightly cloudy, tapped 30 cm^3 . Cell count 866, glucose 0.08'.

After several seizures on 27 February, some in both shoulders and both arms, some down his entire left side, 'there has been no movement of the left leg. Highly positive Babinski on both sides. Muscle-shortening reflex on the right, not on the left. He is generally in a daze. He has difficulty taking liquid nourishment, and barely responds when addressed.'

The notes for the following day are brief: 'Condition remains the same. Dazed.'

Asbjørn Elgstøen died on 1 March 1926. The clinical diagnosis was meningitis. Added comments confirm that there was a post-mortem examination: 'Autopsy findings: cerebral abscess. Suppurative meningitis.'

Disease mechanism

Three days after Asbjørn died, Finn Amundsen wrote in the *Idrætsliv* magazine: 'When Elgstøen returned home from the trip to Finland and Sweden, he had a cold and a slight earache stemming from frostbite he suffered in Finland. Sadly, this frostbite was much more serious than in most cases, because it extended to his inner ear, from where it developed into malign meningitis. And that proved to be too much of a battle even for this strapping, broad-shouldered native of Nordmarka.' [\(3\)](#)

This explanation has remained unchallenged [\(3, 6, 8\)](#). But it is not supported by other sources. There is no mention of an earache in the medical records, nor in Hysing Olsen's summary report or in the newspaper articles about Asbjørn's death [\(1, 7, 10–13\)](#).

Strenuous physical activity at freezing temperatures weakens the immune defence of the mucous membranes [\(14\)](#). In consequence, cross-country skiers have more frequent respiratory infections, particularly if they travel and compete extensively [\(15\)](#). Hysing Olsen acknowledged that the travel itinerary had been too ambitious. In the future, one should seek to concentrate on a single destination [\(1\)](#).

«It is likely that competing in freezing temperatures and an arduous travel itinerary will have weakened Asbjørn's immune defence, leading to sinusitis, meningoencephalitis and cerebral abscess»

Ear infections often lead to abscesses in the lower part of the temporal lobe or the cerebellum, while infections in the ethmoid and frontal sinuses typically cause abscesses in the frontal lobes (16). Asbjørn's left-sided focal motor epileptic seizure with Todd's postictal paresis of the left leg suggests that the abscess was located behind the right frontal lobe with affection of the precentral gyrus. Because he had a cold and a frontal headache without any symptoms of otitis or mastoiditis, we believe it is likely that competing in freezing temperatures and an arduous travel itinerary will have weakened Asbjørn's immune defence, leading to sinusitis, meningoencephalitis and cerebral abscess.

The mortality rate from meningoencephalitis is still considerable. At that time, doctors had no access to antibiotics, appropriate diagnostic imaging or intensive treatment. Norway's neurosurgical offer was limited to Vilhelm Magnus' (1871–1929) private practice (17). Lumbar puncture with a needle was introduced in 1891 in order to reduce the intracranial pressure in cases of tuberculous meningitis (18). The indication for repeated lumbar punctures is not clear from the medical notes, but it is difficult to envisage any reason other than the relief of pressure. Lumbar puncture *can* lead to herniation in patients with a cerebral abscess. We can only speculate whether the repeated lumbar punctures may have aggravated the condition.

Epilogue

In 1926, FIS had no lower temperature limit for cross-country skiing events. These days, the lower limit is -15 °C for children and young people, -18 °C for juniors and seniors for distances up to 15 km, and -15 °C for longer races (19). It is thought-provoking that the coach had to defend his decision not to let frostbitten athletes take part in a 50-kilometre race in extreme temperatures.

When he passed away, tributes were paid to Asbjørn Elgstøen as a skier, a friend and a fellow human being (8, 10–13). Aker skiing association erected a memorial to him that was unveiled in the autumn of 1926 at Lunner Cemetery (Figure 3). His friend Johan Grøttumsbråten described him as 'a fine man, quiet and unassuming, a genuine native of Nordmarka' (3, 4).



Figure 3 Asbjørn Elgstøen's memorial at Lunner Cemetery. Photo: Karl O. Nakken

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